# AN ASSESSMENT OF PERSONNEL ACCOUNTABILITY WITHIN MANUFACTURING AT CONTINENTAL TYRE SOUTH AFRICA

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**DECLARATION**:

In accordance with Rule G4.6.3, I hereby declare that the above-mentioned treatise is my own work and that it has not previously been submitted for assessment to another University or for another qualification.

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## ABSTRACT

South Africa as a country producing certain commodities is experiencing profound changes as a result of globalisation. Globalisation refers to the sourcing of goods from locations around the world to take advantage of national differences in the cost and quality of factors of production, such as labour, energy, land and capital. By doing this, companies hope to lower their overall cost structure and improve the quality or functionality of their product offering, thereby allowing them to compete more effectively.

To remain competitive in a global environment, having personnel who are accountable for what they have control over, can help revitalise the business character, strengthen the global competitiveness of corporations, heighten innovation, improve the quality of products and services produced by companies' world wide, and increase the responsiveness of organisations to the needs and wants of customers.

Continental Tyre South Africa (CTSA) is a local and global supplier of tyres, and the global sourcing for tyres by sales divisions, requires CTSA to remain competitive on price in the global market.

The overall purpose of the research was to assess the current level of personnel accountability on all levels within manufacturing at CTSA and to formulate recommendations to address the shortfalls identified through the research.

The research methodology for this study comprised of the following steps:

Firstly, the contextual elements that define accountability were researched;

Secondly, the appropriate research methodology techniques were researched and applied. The current level of accountability was assessed in an empirical study which involved completing a questionnaire during structured interviews with respondents; and

Thirdly, the data obtained from the questionnaires were analysed showing some areas of accountability, but shortfalls in other areas.

The final step of this study entailed the formulation of recommendations to address the shortfalls identified in the different levels and elements of accountability namely: Responsibility, Ability, Means, Authority and Measurement.

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# CHAPTER 1

# PROBLEM STATEMENT AND DEFINITION OF CONCEPTS

## 1.1 INTRODUCTION

Continental Tyre South Africa (CTSA) is a tyre manufacturer based in Port Elizabeth which supplies tyres to both local and international markets. CTSA has a strong technological association with leading vehicle manufacturers for the development of tyres. These associations require CTSA to adhere to stringent specifications as laid down by the vehicle manufacturers and global quality standards.

CTSA does not only compete in the manufacturing and sale of tyres with opposition manufacturers but also with the other plants within the Continental group as a low cost quality producer for the supply of tyres to the market.

For CTSA to remain a competitive global supplier of tyres to the market it requires of them to continuously reduce costs through quality initiatives. This lead to the need for this research whereby accountability can help revitalize the business character, strengthen the global competitiveness of the organisation, heighten innovation, improve quality of products and services produced by the company, and increase the responsiveness of the company to the needs and wants of customers (Connors & Smith, 2005), through the assessment and evaluation of the status of personnel accountability within the manufacturing environment at CTSA.

## 1.2 MAIN PROBLEM STATEMENT

Accountability was generally defined as accepting and meeting one's personal responsibilities, being and feeling obliged to another individual as well as oneself, and having to justify one's actions to others (Rutkowski & Steelman, 2005). Connors & Smith (2005) defined accountability as "A personal choice to rise above one's circumstances and demonstrate the ownership necessary for achieving desired results; to see it, own it, solve it and do it".

The single most significant reason accountability failed in organisations was that personnel were held accountable for the wrong things (Schuitema, 2003:121), meaning that they were held accountable for certain results over which they had no control.

According to Brower (1995), empowerment required personnel to have had the authority to make decisions (but not unlimited), accountability, ability, and information. Schuitema (2003:35), believed there were three themes that should be taken into account when dealing with the concept of empowerment. Personnel must have the means, authority, ability and accountability. These categories could be further described as follows according to Schuitema (2003:35): Means, the tools, equipment to do the job and standards of how to do the job; Authority to innovate and decide; Ability, the skills, knowledge and competence to do the job and Accountability, which lead to punishment or reward.

Cleary (1995) believed that the tools must be in place to do the job. However to improve the efficiency of a process, Cleary (1995) believed the operator should be given and trained on the necessary problem-solving and statistical tools for real

improvement empowerment, as those who were closest to the organisation's processes was in the best position to improve them. For this to be applied, the operator must have the ability and genuine desire to improve the products and processes of the organisation (Cleary, 1995).

But as mentioned by Demos (2005:68) "You need to measure to manage".

Although (Brown, 1995; Cleary, 1995; Schuitema, 2003; Connors & Smith, 2005; Rutkowski & Steelman, 2005) all had different approaches to accountability they all seem to overlap on certain criteria; to make someone accountable they need to be responsible, have the ability, authority and means, and their outputs need to be measured. Only then can a person be rewarded or disciplined based on the outcome.

As a result of globalisation, pressures for cost reductions were the greatest in industries producing commodity-type products (Hill, 2005:434). Pressures for cost reductions had been intense in the global tyre industry over the past decade. Tyres were a commodity type product where meaningful differentiation is difficult and price was the main competitive weapon. Due to the resulting cost pressures, most tyre firms were trying to rationalize their operations in a manner that was consistent with the attainment of a low cost position (Hill, 2005:424). This included the moving of production facilities to lower cost locations around the globe where they could be performed more efficiently and effectively (Hill, 2005:416).

This lead to the main problem to be researched in this study, namely:

**Are personnel held accountable within the manufacturing environment of Continental Tyre South Africa?**

## 1.3 STATEMENT OF SUB-PROBLEMS

In order to develop a strategy to conduct this research in a systematic manner, three sub-problems were identified to enable the researcher to find an appropriate solution to the main problem. These sub-problems are listed below:

**Sub-Problem 1**

What does the literature reveal about the different elements that make up accountability?

**Sub-Problem 2**

How can accountability be assessed?

**Sub-Problem 3**

Based on the results obtained from sub-problems one and two (above), what strategies can be implemented to address the shortfalls as revealed by the assessment?

## 1.4 DEFINITION OF KEY CONCEPTS

The following definitions were regarded as key terms and concepts in the clarification of the meaning of the research.

### 1.4.1 Assessment

Assessment is the process of documenting, usually in measurable terms, knowledge, skills, attitudes and beliefs (Assessment, 2006). According to Meyer and Botha (2000:21), assessment required a consultative approach which required the following skills. The ability to:

- Determine data collection process;
- Determine types/amount of data sought;
- Utilize appropriate mix of method and technology to ensure efficiency (speed), objectivity, comparability and validity;
- Clarify boundaries of confidentiality;
- Select a process that would facilitate openness;
- Result in common database;
- Represent the total system;
- Gather data bring out existing dissatisfaction;
- Identify future states of change;
- Identify first steps of transition;
- Reduce fear of openness/vulnerability;
- Watch for new and deeper issues;
- Suspend judgement;
- Know when one had enough data; and
- Suppress hurtful comments.

### 1.4.2 Accountability

Accountability is a concept in ethics with several meanings; it is often used synonymously with such concepts as answerability, responsibility, blameworthiness, liability and other terms associated with the expectation of account giving (Accountability, 2006).

The product of the empowerment process was an accountable person, someone who took responsibility for the situation he or she was in. It also highlights the distinction between malevolence and benevolence. Malevolence intention was accounting for misfortune based on what another has done, whereas benevolence was accounting for it on the basis of your own actions. A benevolent person is one who accepted accountability (Schuitema, 2003:110).

For this study, the elements of accountability had been defined as responsibility, ability, authority, means, and measure.

## 1.5 DELIMITATION OF THE RESEARCH

Delimiting the research serves the purpose of making the research topic manageable from a research point of view.

### 1.5.1 Organisational level

This research was conducted at CTSA, a tyre manufacturing company, which employs more than 1000 employees in manufacturing.

### 1.5.2 Geographical demarcation

The research was limited to CTSA, situated in Port Elizabeth.

### 1.5.3 Functional departments

The research was focussed on all functional departments that had direct impact on manufacturing.

### 1.5.4 Functional levels

The research was focussed on all levels of personnel that had direct impact on manufacturing.

## 1.6 KEY ASSUMPTIONS

The following assumptions were made.

### 1.6.1 Assumption one

CTSA needs to strengthen their global competitiveness, heighten innovation, improve quality of products and services, and increase the responsiveness of the organisation to the needs and wants of customers and constituents.

### 1.6.2 Assumption two

It was assumed that the management of CTSA wished to learn from the outcome of the assessment to establish strategies to address the shortfall on accountability in the different departments and department levels if required.

## 1.7 PRIOR RESEARCH ON ACCOUNTABILITY

The initial step in the research was to undertake an in-depth international as well as national literature search on accountability, with particular attention to the aspects that make up accountability, namely responsibility, ability, means, authority and measure. At national and international level, the literature search entailed the use of various library facilities to acquire relevant and appropriate sources of information. An online search through EMERALD, EBSCO host and Google databases were conducted to obtain relevant indices.

Over the past decade, extensive research had been done on the various aspects making up accountability. No stand-alone research had been done that focuses exclusively on accountability in tyre manufacturing, except one study by Schuitema in 1998, which focussed specifically on accountability within a tyre manufacturing environment.

The research by Schuitema was of specific importance, as Schuitema discussed the importance of developing accountability and on holding people accountable within the framework of manufacturing. Schuitema placed specific emphasis on the aspects that make up accountability namely, responsibility, means, ability, authority and measure.

## 1.8 SIGNIFICANCE OF THE RESEARCH

According to Connors & Smith (2005), accountability could help revitalise the business character, strengthen the global competitiveness of corporations, heighten innovation, improve quality of products and services produced by companies worldwide, and increase the responsiveness of organisations to the needs and wants of customers.

Through the assessment of the criteria that made up accountability on the various departments and levels of the organisation that impact on manufacturing, it was possible to establish the current rate per department and department level which could assist with the development of models to address shortfalls of accountability to stay competitive in the global market.

## 1.9 RESEARCH DESIGN

In order to develop and define a practical solution to the stated main and sub-problems, the following research procedure was followed.

### 1.9.1 Empirical study

An assessment was undertaken into the current status of personnel accountability within manufacturing at CTSA using the following research tools:

- Personal interviews: all personnel levels were interviewed using a structured questionnaire aimed at extracting specific information relating to the current status of personnel accountability;
- A questionnaire: was aimed at assessing the elements that defines accountability. The individuals had to rate their current status, but also that of their sub-ordinates (if any), and their superior (Appendix A and B);
- Statistical analysis of the data: the statistical procedures used in interpreting and analysing the data were determined in consultation with a statistician at the time the questionnaire was drawn up.

### 1.9.2 Development of a personnel accountability model

The results of the literature survey and the empirical survey were used to assist management in identifying the shortfalls and opportunities to strategically put action plans in place to address the shortfalls.

## 1.10 SUMMARY

The aim of this chapter was to present the main problem to be addressed and to outline how the research was employed to solve the problem. Key concepts had been defined and the objectives and significance of the research had been stated. Lastly the research procedure to be followed was elaborated on in the compilation of the research design.

Chapter two provides a demarcation of the literature covered, followed by a definition of the key concepts covered.

# CHAPTER 2

# CONTEXTUAL ELEMENTS OF ACCOUNTABILITY

## 2.1 INTRODUCTION

What is accountability? What are the elements that make up accountability? Why does accountability fail in certain organisations? These are some of the questions that will be addressed in this chapter in investigating the contextual elements of accountability.

The globalisation of manufacturing refers to the sourcing of goods and services from locations around the world to take advantage of national differences in the cost and quality of factors of manufacturing such as labour, energy, land and capital. By doing this, companies hope to lower their overall cost structure and or improve the quality or functionality of their product offering, thereby allowing them to compete more effectively (Hill, 2005:7).

Connors & Smith (2005) emphasise that accountability can help in revitalising the character of the organisation, make stronger the global competitiveness of the organisation, heighten innovation, improve the quality of products and services produced by the organisation world wide, and increase responsiveness of the organisation to the needs and wants of consumers. It can therefore be construed, that there must be a strong correlation between the organisation's global competitiveness and accountability.

In chapter one, the problem statement, definition of concepts and the overall purpose of this research, namely, to critically assess personnel accountability within manufacturing at CTSA, were set out. The purpose of this chapter is to provide the necessary theoretical background of the contextual elements of accountability. This chapter therefore, investigates the essence of accountability and the elements that support accountability.

## 2.2 THE ESSENCE OF ACCOUNTABILITY

Accountability is very important to organisations not only for the reason of competitiveness, but also as a result of cost incurred due to a lack of accountability. Staub (2005) states that in 2005, a lack of accountability cost corporate America tens of billions of dollars a year in terms of employee theft, rework, return of defective products, inefficiency, workplace conflicts and misunderstandings. This, in turn, lead to ineffective work practices, quality control issues and differentials in work practices, as well as leadership and supervisory behaviours and loss of valuable employees because of disillusionment and cynicism.

As quoted by Zachary (2007), “Meet Everybody, Somebody, Anybody and Nobody. There was an important job to be done, and Everybody was sure that Somebody would do it. Anybody could have done it but Nobody did because it was Everybody’s job. Everybody thought Anybody could do it, but Nobody realized that Everybody wouldn’t do it”. This clearly states the case for accountability.

Zachary (2007) argues that accountability requires shared intention, responsibility, ownership and commitment to action, otherwise organisations would clearly miss the mark and start blaming each other for work that should have been done and this could lead to disastrous results. Zachary (2007) believes that every organisation would approach accountability differently, but argues for accountability to be successful it would require the following seven key ingredients:

- Goal setting: creates the framework that defines, and focuses on the work that needs to be done, eliminates ambiguity, provides a framework for direction, gauging progress and measuring success, and sets a context for the work to be done;
- Clarifying expectations: promotes team, individual and organisational accountability. If individuals understand what is required, they can manage themselves better and feel a sense of ownership in meeting performance objectives or desired results;
- Defining roles and responsibilities: provides a mechanism to clearly assign accountability to those responsible for carrying out a task at all levels of the organisation. When individuals are clear what their roles are and what they are responsible for and are confident about what is in their control and what is not, they can accept responsibility with the full knowledge of what is expected of them;
- Monitoring progress and measuring results: the goals must be set, the expectations clarified, the roles and responsibilities defined a framework

to evaluate against. Monitoring progress and measuring results create value for an organisation when they are done deliberately and are carefully planned and continuously embraced;

- Gathering feedback: encourages accountability, fosters ownership, nurtures commitment and creates ongoing value for individuals, teams, groups and organisations as a whole. The process of feedback opens lines of communication, encourages participation, builds relationships, engages people, drums out resistance and creates continuing awareness and interest;
- Formulating action goals: more critical than the successes one has had, is the identification of the failures, but, more importantly, what one has learned from these failures so one can take action by formulating appropriate action goals and integrating process improvement; and
- Integrating process improvement: final ingredient to the first six is the practice and systematic application of all the ingredients. Accountability is the portal to process improvement. It opens doors to action by requiring that goals are set, expectations are clarified, roles and responsibilities are defined, progress is monitored, results are measured and feedback is continuously gathered and acted on.

Schuitema (2003:121) maintains that one of the main reasons accountability fails in organisations is that personnel are held accountable for what they get from

people and not what they give, meaning that they are held accountable for certain results over which they have no control.

For example, a farmer does everything in his power to ensure his crop is a success, listens to weather forecasts, ploughs at the right time, fertilises at the right time, plants at the right time and looks after his crop during the season. Right at the end of the season a hail storm destroys his whole crop. It would clearly be unjust to hold the farmer accountable for a poor crop, as that would imply that he wilfully destroyed it. On the other hand, assume the farmer had an excellent crop and the weather conditions were perfect. However, on examination, one discovers that he could have had an even bigger crop if he fertilised correctly, something which he neglected to do. In this case even if the results were good, the farmer is still accountable for his negligence (Schuitema, 2003:122).

Schuitema (2003:123) further argues that in many organisations the subordinate is held responsible for doing his task and his superior is held accountable for the result or that the task had been done. As soon as there is a split between responsibility and accountability, the subordinate's resolve will be nullified. He will merely become a tool in the hands of his superior. He will have no choice of his own since his capacity to deliberately make a difference has been nullified by the fact that his superior is accountable.

For this reason it is necessary to empower people to be able to hold them accountable, Schuitema (2003:35) believes that in order to hold people

accountable they should be given the means to do the task, have the ability to do the task, and have the authority to make decisions regarding the task.

In summary, in order to hold someone accountable:

- The person's responsibility must be clearly defined;
- If it is clear what to do, does the person have the ability to do the job;
- If the person has the ability, does the person have the means to do the job;
- If the person has the means, does the person have the authority to make decisions regarding the job;
- If the person has the authority, is the measurement systems in place to measure the person; and
- If the measurement systems are in place only then can a person be rewarded or disciplined and therefore held accountable.

## 2.3 THE ELEMENTS OF ACCOUNTABILITY

The following elements have been defined as key to the formulation and clarification of accountability.

### 2.3.1 Responsibility

One of Zachary's (2007) key ingredients of accountability is the defining of roles and responsibilities, as they provide a mechanism to clearly assign accountability to those responsible for carrying out a task or a job at all levels of the organisation.

When roles and responsibilities have not been clearly defined, it can create ambiguity that can lead to unintended consequences such as the following:

- Personnel do the minimum required;
- Attempts to get work done, by doing a bit of everything but not completing tasks which forces other personnel to complete the tasks;
- Longer hours and additional work are required that are in essence not required in obtaining the result;
- Resentment towards personnel not performing and frustration can lead to non-productivity;
- Tasks gets completed but not as effectively and efficiently as required; and
- The chain of accountability becomes unclear and distorted.

The benefit of clearly defined roles and responsibilities endorses self-sufficiency, ownership, and self-accountability. When personnel understand and are certain about what is in their control and what is not, they can take responsibility with the full knowledge of what is expected of them. Defining roles and responsibilities identify the levels of optimum or best performance and creates control limits

around the work to be done, both of which fosters self-accountability (Zachary, 2007).

### 2.3.2 Ability

Schuitema (2003:36) argues that to empower a person or hold a person accountable the person must have the ability to do the task. The person must know what is expected of them and be technically able. Does the person know how to do the task, what is required to do the task and why the person should do the task? Does the person have the necessary skills and knowledge to perform the task? Knowledge is related to understanding and significance of the task that is performed, and how it fits into the final product as per the customer's requirements (Schuitema, 2003:85).

Connors & Smith (2005) concur that the real value and benefit of accountability stems from a person's ability to influence events and outcomes before they happen. This confirms what Schuitema (2003:85) is saying, that if a person knows how to do the task and why, the person has the ability to influence the outcome.
In Brower's (1995) model of empowerment, ability is one of the key requirements. These abilities include:

- Knowledge and skills;
- Well-developed identity, or state of being; and
- Requisite affirming and receptive will.

Although Brower's work is more related to teams, it is pertinent to individual accountability, as at CTSA all personnel in manufacturing form part of a work team.

### 2.3.3 Means

Schuitema (2003:35) believes that to empower or hold someone accountable the person must have the means to do the job, meaning the tools must be available, equipment must be in good working order and the standards, systems and operating procedures must be in place to guide personnel in doing their jobs correctly.

The means to do the job ultimately starts with the specification of the product required by the customer and the ability of the supplier to design, engineer, and produce or operate by means of conventional or stipulated equipment, techniques and technology (Oakland, 2000:45).

The basic requirements of a specification according to Oakland (2000:45) are that it gives the:

- Performance requirement of the product or service;
- Parameters – such as dimensions, concentration and turn-around time – which describe the product or service adequately;

- Materials to be used by stipulating properties or referring to other specifications;
- Method of production or delivery of the service;
- Inspection/testing/checking requirements; and
- References to other applicable specifications or documents.

To fulfil its purpose the specification must be written in terminology that is readily understood and in a manner that is unambiguous and so it cannot be subject to differing interpretations.

In the case of CTSA, a manufacturing plant, the organisation needs to control production processes. Oakland (2000:87) believes an organisation can only achieve this through:

- Clearly understandable work standards or instructions;
- Suitable production, installation and service provision equipment;
- Suitable working environments;
- Suitable inspection, measuring and test equipment, capable of the necessary accuracy and precision;
- Implementation of suitable monitoring, inspection or testing activities;
- Provision for identifying the status of product/service, with respect to required measurement and verification activities; and
- Suitable methods for release and delivery of products and or services.

Where applicable, the organisation needs to identify the product/service by suitable means throughout all processes. Where traceability is a requirement for the organisation, there is a need to control the identification of product/service. There is also a need to ensure that, during internal processing of the product/service, the identification, packaging, storage, preservation and handling do not adversely affect conformity with the requirements (Oakland, 2000:87).

### 2.3.4 Authority

Based on Brower's (1995) model of empowerment, one key aspect of empowerment is that what personnel and teams require, authority, authority to make many (but not unlimited) decisions. This means to make decisions without getting prior approval from a manager, and without having their decisions overruled. This is the foundation of empowerment.

Personnel and teams should not take on authority on all levels all at once, without any limits, up front. Unfortunately, some companies try to dump unlimited decision authority on personnel and teams right from day one. This may not guarantee failure but it makes failure much more likely. A better process is to plan with the teams the phasing in of increasing authority, with some decisions delegated immediately, the scope of more authority increasing over time, and certain other authority perhaps never turned over completely to personnel or teams. For authority that is to be delegated or increased in the future, wise management plans with personnel and teams, determine what prior levels of capability they will

demonstrate, and what additional forms of information and training they will require first (Brower, 1995).

Management must be clear in their delegation as that can make a big difference in the willingness of employees to accept authority.

According to Cleary (1995), if one were suddenly to transfer the immense power of an eight-cylinder automobile engine to the drive train without the use of intermediate steps and appropriate gear ratios, the result would be not only inefficient but ultimately destructive. Empowerment literally means transferring power to others in the organisation and is packed with the same risks that transferring any kind of power poses. To work smoothly, it must be accompanied by the appropriate planning, support, and processes (Cleary, 1995).

The ultimate goal of empowerment is an individual's genuine desire to improve the products or services of that organisation to the benefit of all. In traditional, hierarchically organised organisations, it has been only top managers that have worried about such improvement. What has become increasingly clear, however, as a result of the influence of W. Edwards Deming and other quality theorists, is that it is those who are closest to an organisation's processes that are in the best position to improve them. However, there needs to be a grounded understanding of systems, appreciation for variations and its implications, a commitment to teamwork and an understanding of customers, both internal and external (Cleary, 1995).

Kermally (2004:124) cites Peter Drucker who defines empowerment as an act of releasing human energy. It is about creating situations where workers share power and assume the responsibility of making their decisions for the benefit of the organisation and themselves. To use a motivational perspective, it is about providing an opportunity to gain achievement, responsibility and advancement and it is also about eliminating meaningless, powerlessness and isolation (Kermally, 2004:124).

Many senior managers are afraid to empower their staff. Some senior managers have worked a number of years gaining power, so giving it away or some of it away means less power for them. Empowering people increases power, a phenomenon of increasing returns. Empowering people goes hand in hand with creating opportunities for employees to make decisions (Kermally, 2004:125).

Schuitema (2003:36) argues that one cannot hold someone accountable for a task or job if you have not given them authority to do it. The counterpoint to authority is control. In other words, when one gives someone authority over a matter one implicitly lose direct control. The third axiom states that empowerment is about incremental suspension of control. This implies that the authority of a subordinate has to be given incrementally or the subordinate will be disabled. The final argument of Schuitema (2003:36) for empowerment is that the giving of authority must always be a step forward when decisions are entrusted to an individual.

### 2.3.5 Measure

It has often been said that it is not possible to manage what cannot be measured. Whether this is strictly true or not, there are clear arguments for measuring. In a quality driven, never ending improvement environment, the following are some of the main reasons why measurement is needed and why it plays a key role in quality and productivity improvement (Oakland, 2000:119):

- To ensure customer requirements have been met;
- To be able to set sensible objectives and comply with them;
- To provide standards for establishing comparisons;
- To provide visibility and provide a scoreboard for people to monitor their own performance levels;
- To highlight quality problems and determine which areas require priority attention;
- To give an indication of the costs of poor quality;
- To justify the use of resources; and
- To provide feedback for driving the improvement effort.

In the business of process improvement, process understanding, definition, measurement and management are tied inextricably together (Oakland, 2000:119). In order to assess and evaluate performance accurately, appropriate measurement must be designed, developed and maintained by people who own the processes concerned. They may find it necessary to measure effectiveness,

efficiency, quality, impact and productivity. In these areas there are many types of measurement, including direct output or input figures, the cost of poor quality, economic data, comments and complaints from customers, information from customer or employee surveys, generally continuous variable measures (such as time) or discrete attribute measures (such as absentees). Whichever measures and indicators are used by the process owners, they must reflect the true performance of the process in customer – supplier terms, and emphasise continuous improvement (Oakland, 2000:120).

Oakland (2000:120) argues that if true measures of effectiveness are to be obtained, there are three components that must be examined – human, technical and business components. The human component is clearly of major importance and the key tests are that, wherever measures are used, they must be:

- Understood by all people being measured;
- Accepted by the individuals concerned;
- Compatible with the rewards and recognition systems; and
- Designed to offer minimal opportunity for manipulation.

The technical measures must be the ones that truly represent the controllable aspects of the processes, rather than simple output measures that cannot be related to process management. They must also be correct, precise and accurate. The business component requires that the measures are objective, timely and

result-oriented, and above all, they must mean something to those working in and around the process, including the customers (Oakland, 2000:120).

Connors and Smith (2005) believe the first step toward creating a culture of accountability is to define clear results within an organisation. Whether one has a goal to reach in sales, a specified deliver period for one's product, or a minimum return on investment to achieve, make sure one knows what result one needs to reach. Once it has been decided on a company wide goal, make it clear to all managers and employees from the bottom to the top ranks. Everyone must know what they are working for and how their job pushes the organisation forward. The daily activities that comprises of peoples jobs must then be consistently in alignment with the targeted results.

To monitor progress or measure results is not easy argues Zachary (2007) without having something which to evaluate against. Setting goals, clarifying expectations and defining roles and responsibilities provide that "something", a framework or a standard for evaluation. Measuring results provides data points to compare against a standard and each other, and can yield formative and summative data that promote process improvement and development. Measuring results is an essential accountability process for individuals, teams and organisations that want to recognise performance, build capacity to grow and for improvement (Zachary, 2007).

A study conducted by Nelson in 2001 found evidence that there is a close link between the use of recognition and enhanced performance (Nelson & Spitzer, 2003:9). A fundamental reason for the use of recognition is that it has a measurable positive impact on the job performance of employees.

Nelson and Spitzer (2003:xxv) define recognition as a positive consequence provided to a person for a behaviour or result. Recognition can take the form of acknowledgement, approval, or the expression of gratitude. Recognition can be given while an employee is striving to achieve a certain goal or behaviour, or once the employee has completed it.

In the study conducted by Nelson in 2001, most managers agreed with the notion that the use of recognition leads to enhanced performance in many ways and are as follows (Nelson & Spitzer, 2003:10):

- Recognising employees helps managers better motivate them;
- Providing non-monetary recognition to employees when they do good work helps to increase their performance;
- Recognising employees provides them with practical feedback;
- Recognising employees for good work makes it easier to get the work done;
- Recognising employees helps them be more productive;
- Providing non-monetary recognition helps certain managers to achieve personal goals; and
- Providing non-monetary recognition helps certain managers to achieve their job goals.

The benefits of recognition according to Nelson and Spitzer (2003:xxxiii) are as follows:

- Improved morale: When employees are recognised for doing good work, they feel special and consequently happier and satisfied with their employers;
- Enhanced productivity: Employees who feel good about their jobs tend to perform at a higher level; the performance itself becomes a further motivator for wanting to continue to do a good job;
- Increased competitiveness: When organisations recognise and reward performance that is aligned with the organisation's key objectives, the organisation becomes more successful, competitive and efficient in reaching its goals;
- Higher revenue and profit: Recognising progress in these areas will encourage employees to work harder to make money and realise greater profits for the organisation;
- Decreased stress: There is a fine line between stress and excitement. Recognition helps to make work more fun and exciting, increasing the likelihood that employees will "rise to the challenge" when needed, rather than feel out of control and swamped by their work;
- Decreased absenteeism: When employees are thanked and valued for the work they do, they begin to look forward to the time they spend on the job. Absenteeism declines;

- Decreased turnover: A study by the Gallup Organisation in 2001 – based on interviews with two million workers at seven hundred companies – revealed that the number one factor affecting the length of an employee's tenure at a company is the quality of that employee's relationship with his or her immediate supervisor. More recognition equals better relationships, equals decreased turnover and increased tenure; and
- Lower related costs: When employees are happy to come to work and are excited about doing their best work, the need for - and costs of – interviewing, hiring, and training new employees declines drastically.

Lessons learned from theorist Victor Vroom's expectancy theory in 1970, "that when employees are given choices they choose the option that promises them the greatest reward" as stated by Kermally (2003:55) are as follows:

- Define what you expect from your employees;
- Consider your employees' goals and structure work to facilitate the achievement of these goals;
- Set objectives realistically and clearly;
- Set measurable and meaningful objectives;
- Coach your employees to be able to achieve the goals set;
- Provide adequate support for success;
- Set a realistic and meaningful appraisal system;
- Clarify the link between performance and reward;
- There is no point in offering rewards which employees do not value; and

- Provide rewards for success.

Nelson and Spitzer (2003:xxv) define reward as an item or experience with monetary value (but not necessarily money) that is provided for desired behaviour or performance, often with accompanying recognition. Harvard Business School professor and management consultant Rosabeth Moss Kanter as cited by Nelson and Spitzer (2003:25) defines a reward as “something special - a special gain for special achievements, a treat for doing something above-and-beyond”.

Schuitema (2003:85) agrees that if a person goes the extra mile, beyond the standard for the job they should be rewarded. However, if a person performs to the standard, they should be given the appropriate recognition. If however, a person under performs according to the standard, one should make sure that the means, ability and authority were not an issue. If the person was careless or negligent one should reprimand him, however, if the person was deliberately malevolent one should punish him (Schuitema, 2003:85).

## 2.4 CONCLUDING REMARKS

As the overall purpose of this research was to critically analyse accountability, it was first necessary to research the meaning, role and purpose of accountability and research the contextual elements that provide the backbone and necessary structure that supports accountability. The objective of the chapter was therefore,

to gain an understanding of the elements of accountability and how these elements support accountability. The approach has thus been to evaluate each element and see how they support each other in the make-up of accountability. It has been shown that in order to hold someone accountable, the following requirements must be in place:

- The person's responsibility must be clearly defined;
- If it is clear what to do, does the person have the ability to do the job;
- If the person has the ability, does the person have the means to do the job;
- If the person has the means, does the person have the authority to make decisions regarding the job;
- If the person has the authority, is the measurement systems in place to measure the person; and
- If the measurement systems are in place only then can a person be rewarded or disciplined and therefore held accountable.

Chapter three describes the research methodology used to critically and systematically analyse the accountability of personnel within manufacturing at CTSA.

# CHAPTER 3

# RESEARCH METHODOLOGY FOR THE EMPIRICAL STUDY

## 3.1 INTRODUCTION

In chapter two accountability was defined and the contextual elements that support the backbone of accountability were discussed in solving the first sub-problem, namely:

- What does the literature reveal about the different aspects that make up accountability?

The purpose of this chapter is to discuss the research methodology used in solving the second sub-problem, namely:

- How can accountability be assessed?

Once the above sub-problems had been solved, the third sub-problem was addressed:

- What strategies can be implemented to address the shortfalls as revealed by the assessment?

In solving the above three sub-problems, the main problem described in section 1.2 was resolved.

## 3.2 RESEARCH METHODOLOGY

Collis & Hussey (2003:1) argue that although research is central to both business and academic activities, there is no consensus in the literature on how it should be defined. One reason for this, is that research means different things to different people. However, from the many different definitions offered, there appears to be agreement that:

- Research is a process of enquiry and investigation;
- It is systematic and methodical; and
- Research increases knowledge.

Leedy (1997:3) defines research as a systematic process of collecting and analysing information or data in order to increase our understanding of the phenomenon with which we are concerned with or are interested in.

Sekaran (2000:2) differentiates between general and business research. He defines general research as the process of finding solutions to a problem after a thorough study and analysis of the situational factors and business research as a systematic and organised effort to investigate a specific problem encountered in the work environment, which needs a solution. Leedy (1997:4) agrees that research can be differentiated between formal and informal research, where informal research refers to the process of solving smaller, every-day problems and

formal research which is used by managers in an organisation who are constantly involved in decision making processes.

Sekaran (2006:6) believes research can be undertaken for two different reasons, namely:

- To solve a current problem that demands a timely solution. This process is referred to as applied research; and
- To generate a body of knowledge by trying to comprehend how certain problems that commonly occur, can be resolved. This is referred to as basic or fundamental research.

According to Collis & Hussey (2003:1) investigations must be thorough and rigorous at all stages of the research process. Research must be organised and conducted efficiently and must make use of the opportunities and resources available. If the research is to provide a coherent and logical outcome, it must be conducted systematically, using appropriate methods to collect and analyse data. Finally, the research must address a specific problem or issue, generally referred to as the research problem, in order to set a definable objective for the research activity.

Collis & Hussey (2003:2) summarise the purpose of research as follows:

- To review and synthesise existing knowledge;
- To investigate an existing problem or situation;
- To provide a solution to a problem;

- To explore and analyse more general issues;
- To construct or create a new procedure or system;
- To explain a new phenomenon;
- To generate new knowledge; and
- Combination of any of the above.

There are many different types of research. Collis & Hussey (2003:10) classify these as the purpose of the research (the reason why one is conducting the research); the process of the research (the way in which one will collect and analyse the data); the logic of the research (whether one is moving from general to the specific or vice versa) and the outcome of the research (whether one is trying to solve a particular problem or make a general contribution to knowledge).

Collis & Hussey (2003:10) maintain that in classifying research according to its purpose, it can be described as either being exploratory, descriptive, analytical or predictive and are defined as follows:

- Exploratory research is conducted into a research problem or issue when there are very few or no earlier studies to which one can refer to for information about the issue or problem. Typical techniques used in exploratory research include case studies, observation and historical analysis which can provide both quantitative and qualitative data.
- Descriptive research is research which describes phenomena as they exist. It is used to identify and obtain information on the characteristics of a

particular problem or issue. The data collected is often quantitative and statistical techniques are used to summarise the information.

- Analytical or explanatory research is a continuation of descriptive research; it goes beyond merely describing the characteristics, to analysing and explaining why or how it is happening. An important element of analytical research is identifying and, possibly controlling the variables in the research activities, since this permits the critical variables or casual links between characteristics to be better explained; and
- Predictive research which goes further than analytical research; it forecasts the likelihood of a similar situation occurring elsewhere. Predictive research aims to generalise from the analysis by predicting certain phenomena on the basis of hypothesised, general relationships. Predictive research provides ‘how’, ‘why’ and ‘where’ answers to current events and also similar events in the future.

Collis & Hussey (2003:13) maintain that in classifying research according to the process, it can be described as quantitative and/or qualitative and defined as follows:

- Quantitative approach is objective in nature and concentrates on measuring phenomena. Therefore, a quantitative approach involves collecting and analysing numerical data and applying statistical tests; and

- Qualitative approach is more subjective in nature and involves examining and reflecting on perceptions in order to gain an understanding of social and human activities.

Collis & Hussey (2003:15) maintain that in classifying the logic of the research, it can be described as deductive and or inductive research and defined as follows:

- Deductive research is a study in which a conceptual and theoretical structure is developed and then tested by empirical observation; thus particular instances are deduced from general inferences; and
- Inductive research is a study in which theory is developed from the observation of empirical reality; thus general inferences are included from particular instances, which is the reverse of the deductive method.

Collis & Hussey (2003:11) maintain that in classifying the outcome of the research, it can be described as applied and or basic research and defined as follows:

- Applied research is research which has been designed to apply its findings to solving a specific problem; and
- Basic research is when the research problem is of a less specific nature, and the research is being conducted primarily to improve one's understanding of general issues, without emphasis on its immediate application.

There are two main research paradigms, namely positivistic and phenomenological (Collis & Hussey, 2003:47). Paradigm refers to the progress of scientific practice based on people's philosophies and assumptions about the world and the nature of knowledge; in this context about how research should be conducted.

The positivistic approach seeks the facts or causes of social phenomena, with little regard to the subjective state of the individual. Logical reasoning is applied to the research so that precision, objectivity and rigour replace hunches, experience and intuition as the means of investigating research problems (Collis & Hussey, 2003:52). The main features of the positivistic paradigm according to Collis & Hussey (2003:55) are as follows:

- Tends to produce quantitative data;
- Uses large samples;
- Concerned with hypothesis testing;
- Data is highly specific and precise;
- The location is artificial;
- Reliability is high;
- Validity is low; and
- Generalises from samples to population.

The phenomenological approach is concerned with the understanding of human behaviour from the participant's own frame of reference. The research methods

used under this approach are an array of interpretative techniques which seek to describe, translate and otherwise come to terms with the meaning, not the frequency of certain more or less naturally occurring phenomena in the social world (Collis & Hussey, 2003:52). The main features of the phenomenological paradigm according to Collis & Hussey (2003:55) are as follows:

- Tends to produce qualitative data;
- Uses small samples;
- Concerned with generating theories;
- Data is rich and subjective;
- The location is natural;
- Reliability is low;
- Validity is high; and
- Generalises from one setting to another.

It is important to remember that the two paradigms represent two extremes of a continuum and that a choice should be made in the early stage of research. However, it is not uncommon in the collection of data to make use of both qualitative and quantitative methods (Collis & Hussey, 2003:76).

### 3.3 SURVEY METHOD APPLICABLE

For the purpose of conducting research on the sub-problems discussed in section 3.1 the positivistic descriptive survey method was chosen. The main reason for

this choice was that the descriptive method assumes that what is observed at any one time is normal, and should the same conditions prevail in future, it could be observed again (Leedy, 1993:186). Collis & Hussey, (2003:176) state that although the face-to-face questionnaire method is time consuming and expensive, this method offers the advantage that response rates tend to be high and comprehensive data can be collected.

Leedy (1993:187) outlines the following characteristics for the basic structure of the descriptive survey method:

- The method deals with a situation that demands observation as a principal means of collecting data;
- The population of the study must be carefully chosen, defined and delimited to ensure discreetness;
- Attention should be given to safeguard the data from the influence of bias; and
- The data gathered through observation needs to be organised and presented systematically to ensure that valid accurate conclusions can be drawn.

### 3.4 DEVELOPMENT OF THE QUESTIONNAIRE

Whether one is following a positivistic or phenomenological paradigm, there will always be a combination of quantitative and qualitative inputs into one's data

generating activities (Collis & Hussey, 2003:162). The balance will depend on one's analytical requirements and overall purpose of one's research.

Questionnaires are associated with both positivistic and phenomenological methodologies (Collis & Hussey, 2003:173). A questionnaire is a list of carefully structured questions, chosen after considerable testing, with a view to eliciting reliable responses from a chosen sample. The aim is to find out what a selected group of participants do, think or feel.

Under positivistic and phenomenological paradigm questionnaires each question can be coded at the design stage and completed questionnaires can be computer processed for ease of analysis. The only difference however, is that positivistic paradigm questions suggests 'closed' questions where phenomenological paradigm questions use 'open-ended-questions' (Collis & Hussey, 2003:173).

### 3.4.1 Questionnaire objective

Leedy (1993:180) states that questionnaires should be designed to fulfil specific research objectives. This will ensure that the constructed questionnaire does not lack in design and precision of expression, which is often the reason for a poor return of questionnaires.

The following are important considerations in questionnaire construction:

- Construct questions in a courteous way that will enhance the chances of having the questionnaire successfully answered. Avoid a commanding imperative attitude;
- The questionnaire should be simple to read and demand as little effort and time from the respondent as possible;
- Think of the person: the researcher should put himself in the respondent's shoes, taking into account that the latter might never have met the researcher. The questionnaire must be cautious in tone and contain reasonable demands;
- Concentrate on the universal: avoid specifics, address general problems and ideas rather than purely personal matters;
- The questionnaire should be brief and only solicit data essential to the research project;
- Check for consistency in dealing with sensitive or debatable issues, or when it is suspected that the respondents may give answers that are deemed prudent rather than true. Incorporate a countercheck in the questionnaire to verify consistency in the answers provided;
- Posted questionnaires should be accompanied by self-addressed, stamped envelopes;
- Offer a summary of the results of the study to respondents in return for their investment of time and courtesy in replying; and

- Think ahead: the researcher must be clear about how results/data will be processed since the data processing procedures will influence the form of the questionnaire.

Collis & Hussey (2003:173) summarise the following main reasons for using questionnaires:

- Sample size;
- Type of questions;
- Wording of the questions and how to ensure that they are intelligible and unambiguous;
- Design of the questionnaire and any instructions;
- Wording of any accompanying letter;
- Method of distribution and return of completed questionnaires;
- Tests for validity and reliability and when they should be applied;
- Methods for collating and analysing the data thus collected; and
- Any action to be taken if questionnaires are not returned.

### 3.4.2 Interview process

Closely linked to the questionnaire is the structured interview. Leedy (1993:192) notes that the questions for an interview should be as accurately planned and carefully worded as in the case of a questionnaire. Leedy (1993:195) provides the

following steps for the successful handling of an interview as a technique for the gathering of data:

- Set up the interview well in advance;
- In advance, provide interviewees with an agenda and set of questions to be asked;
- Ask for permission to tape the conference;
- Confirm date of interview in writing;
- Send a reminder and another agenda of questions 10 days before the interview;
- Be prompt and follow the agenda;
- Following the interview, submit a typescript of the interview and obtain written acknowledgement of its accuracy from the interviewee; and
- After the relevant information had been incorporated in the research report, forward that section to the interviewee for final approval and obtain written permission to use the data in the research report.

An advantage that a structured interview has over a questionnaire is that the researcher can clarify answers and follow up on interesting answers (Melville and Goddard, 1996:45).

For purposes of this research, a questionnaire and structured interview were used. The aim was to compile a comprehensive questionnaire and conduct interviews on a one-on-one basis.

### 3.4.3 Designing questions

When conducting a positivistic study, before one can begin designing questions for an interview or questionnaire according to Collis & Hussey (2003:177), one must know a substantial amount about one's subject, so that one can decide what the most appropriate questions will be. When designing questions, it is essential to bear one's potential audience in mind.

Collis & Hussey (2003:177) view the following general rules as essential for question design:

- Explain the purpose of the interview or questionnaire to all participants;
- Keep one's questions as simple as possible;
- Do not use jargon or specialised language;
- Phrase each question so only one meaning is possible;
- Avoid vague, descriptive words such as 'large' and 'small';
- Avoid asking negative questions as these are easy to misinterpret;
- Ask only one question at a time;
- Include relevant questions only (do not be tempted to include every question one can think of);
- Include questions which serve as cross-checks on the answers to other questions;
- Avoid questions which require the participant to perform calculations;

- Avoid leading or value-laden questions which imply what the required answer might be;
- Avoid offensive questions or insensitive questions which could cause embarrassment;
- Avoid questions which are nothing more than a memory test; and
- Keep one's interview schedule or questionnaire as short as possible, but include all questions required to cover one's purpose.

### 3.4.4 Pilot study

According to Leedy (1993:188) and Schnetler (1989:87) all questionnaires should be pre-tested on a small population to ensure the questionnaire fulfils the requirements for the data to be collected. This will determine whether the questions are readily understood and provide the researcher with an opportunity to enhance, and where necessary, clarify the questionnaire. Collis & Hussey (2003:175) concur that it is essential that one pilots or test one's questionnaire as fully as possible before distribution.

The questionnaire constructed for this research dissertation was tested in pilot interviews with the General Manager responsible for Human Resources, fellow colleagues in the Six Sigma department, and representatives for the trade unions Numsa and Solidarity. The test pilot for the unions was not only for testing purposes but also for their approval to conduct interviews with their members.

The pilot study indicated that no significant flaws existed in the questionnaire; however certain pertinent questions were requested by the unions, although they are not in line as indicated by research. (For the final questionnaire used in the structured interviews see, Appendix A.)

Other criteria that were highlighted by Numsa and Solidarity were the request for all personnel that work on floor level and work in shifts be paid for time required to conduct interviews as they are not available during working hours as a result of the work they perform and are only available before or after a shift. Training department agreed to cover these costs as long as it did not exceed more than an hour. Certain personnel on this level cannot write or read and requested that the questionnaire be revised to accommodate these personnel members. (Questionnaire for this level, appendix B.) The difference between the two questionnaires is that on the second questionnaire one only had to tick one's answer and was shortened as the personnel on this level had no direct reports.

The survey for these personnel was conducted in groups with the help of an overhead projector and an interpreter to assist with any language barriers. With every group interview the purpose of the questionnaire was explained. Each question was shown on the overhead and then explained by the interpreter. Any questions raised during the interview was discussed and explained via the interpreter. The only concern the researcher had was that of potential group think.

The final and most important issue raised by both unions was that of confidentiality. It was clarified that no names were recorded on the questionnaires and that the researcher is the only person present at the interviews and had no direct interaction with the personnel other than the questionnaire.

## 3.5 THE INFLUENCE OF BIAS IN RESEARCH DESIGN AND INTERVIEWER BIAS

There are two factors that can impact on the result of the questionnaire, firstly the randomness by which a sample of the population are selected and secondly the way in which an interview is conducted.

Leedy (1993:213) warns that data obtained in a descriptive survey research are particularly susceptible to distortion as a result of bias in the research design. It is therefore important to safeguard data from the influence of bias.

Many sampling methods present problems of sample bias, mainly because a sampling frame cannot be unambiguously identified in advance. In other words, the sample will not be representative of the population as a whole. In a positivistic study one must recognise this limitation of one's research and attempt to minimise the bias (Collis & Hussey, 2003:159).

Bias is defined as any influence, condition, or set of conditions that singly or together distorts the data from what may have been obtained under conditions of

pure chance. Bias is further described as any influence that may have disturbed the randomness by which a sample population has been selected. Pande, Neuman & Cavanagh (2002:142) define bias as the difference between the data collected in a sample and the true nature of the entire population or process flow. Bias that goes undetected will influence one's interpretation and conclusions about the problem and process. The following are some examples of types of sampling bias:

- Convenience sampling;
- Judgement sampling;
- Systematic sampling;
- Random sampling; and
- Stratified sampling.

For the purpose of this research stratified sampling was used by dividing the sample into different levels and then randomly selecting from those levels.

The point of discussion was that of interviewer bias. Pande, Neuman & Cavanagh (2002:142) state that if one is conducting interviews as part of a positivistic survey, it is important that one abides by strict rules to ensure that interviewer bias is kept to a minimum.

Collis & Hussey (2003:170) cites Brenner (2000) who recommends the following rules to limit interviewer bias:

- Read the questions as they are worded in the questionnaire;
- Read slowly and use correct intonation and emphasis;
- Ask the question in the correct order;
- Ask every question that applies;
- Use respond cards when required;
- Record exactly what the respondent says;
- Do not answer for the respondent;
- Show interest in the answers given by the respondent;
- Make sure that one has understood each answer adequately and that it is adequate; and
- Do not show approval or disapproval of any answer.

## 3.6 SELECTION OF THE RESEARCH SAMPLE

As discussed in section 1.5, the research was limited to all functional departments and all levels that have direct impact on manufacturing. The following seven divisions were identified as having direct impact on the manufacturing process; Plant Engineering (PE), Production (PROD), Projects (PROJ), Industrial Engineering (IE), Quality (QC), Product Industrialisation (PI) and Manpower Development (MR).

These divisions were divided up into five levels as follows:

- Level 1: Head of division;
- Level 2: Product managers, senior engineers, chemists, scheduling manager;
- Level 3: Shift managers, engineers, training officers;
- Level 4: Coordinators, first line managers, technicians, labour trainers; and
- Level 5: Artisans, operators.

The application of stratified sampling requires different groups or in this case levels and then either systematic or random sampling within the levels (Pande, Neuman & Cavanagh, 2002:144).

On level one all divisional heads were interviewed, and also presented with the opportunity to get their buy-in and ensured that their personnel would participate.

As one moves down the levels more random sampling was required as the levels represented more people.

List per shifts in alphabetical order were supplied and every second name was selected for an interview depending on the size of that specific division. All shifts were represented, day, afternoon and night shift.

### 3.7 RESPONSE RATE

Out of a total of 150 targeted personnel, 144 were successfully interviewed, the balance of 6 were discarded as incomplete. The 144 questionnaires that were

completed represented a final response rate of 96%, which was used for evaluation purposes. Table 3.1 gives an overview of the responses received per division per level.

| ACCOUNTABILITY RESEARCH | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Manpower Development | Plant Engineering | Projects | Production | Product Industrialisation | Quality | Industrial Engineering | Total |
| Level 1 | 1 | 1 | | 1 | 1 | 1 | | 5 |
| Level 2 | | 1 | 1 | 7 | 2 | 7 | 1 | 19 |
| Level 3 | 1 | 11 | 2 | 8 | 1 | 6 | 3 | 32 |
| Level 4 | 2 | 3 | 2 | 13 | | 2 | | 22 |
| Level 5 | | 9 | | 56 | | 1 | | 66 |
| Total | 4 | 25 | 5 | 85 | 4 | 17 | 4 | 144 |

**Table 3.1**

**Responses per level per division**

Source: Survey Questionnaire A and B

### 3.8 STATISTICAL TREATMENT OF DATA

As a positivistic approach was applied, mainly quantitative data has been collected on which one would normally need to conduct some form of statistical analysis. This quantitative data will take the form of numerical values which represent the total number of observations or frequencies for variables under study (Collis & Hussey, 2003:196).

This was achieved through the use of rating scales whereby the respondents were allowed to give more discriminating responses, and to state if they have no opinion. This turns the question into a statement and asks the respondent to

indicate their level of agreement with the statement by ticking a box or circling a response. An advantage of this method is that a number of different statements can be provided in a list which does not take up much space, is simple for the respondent to complete and simple for the researcher to code and analyse (Collis & Hussey, 2003:184).

The questionnaire was divided into two sections. The first section contained the different levels and job functions related to that level and in the second section the questions related to accountability.

In the first section the respondent was requested to tick the applicable box. In the second section the questions were divided into five sections addressing the elements of accountability, namely: responsibility, ability, means, authority and measure and the respondent had to write down the number related to his response or on level 5 where certain respondents could not read or write, the respondent only had to tick the relevant box. The questions did not only refer to the respondent him or herself, but also to his superior and subordinates if they had any.

The categories for selection were as follows:

- 0 = NO
- 1 = NOT SURE
- 2 = NEEDS MAJOR IMPROVEMENT
- 3 = NEEDS MINOR IMPROVEMENT
- 4 = YES

The questionnaire also provided space next to each question if the respondents had comments to add if needed. To ensure that the answers were relevant to the current situation it was clearly stated and mentioned that the respondents must use the last three months as reference.

Data obtained from the questionnaire were tabulated in the same sequence as the survey questionnaire. The tabulation of the data facilitated the interpretation and analysis (described in chapter four).

### 3.9 CONCLUDING REMARKS

The purpose of this chapter was to present the theoretical basis for designing the survey questionnaire. Chapter four describes/explains the results of the positivistic survey which was used to evaluate the current personnel accountability within manufacturing at CTSA and to solve the main problem and related sub-problems.

# CHAPTER 4

# ANALYSIS AND INTERPRETATION OF THE RESULTS OF THE EMPIRICAL STUDY

## 4.1 INTRODUCTION

Chapter three described the research methodology used in solving the defined sub-problems. This chapter presents the results of the empirical study, which were used to critically analyse the personnel accountability within manufacturing at CTSA.

The data was analysed and interpreted following the questionnaire structure, but then in more detail per level, element and division. The data will be presented in the following format:

- Overview of all divisions vs. all elements; and
- Overview of all levels vs. all elements;

The above analysis are a general overview of all levels, elements and divisions. The general overview is followed by more specific detail per division, looking at the levels and sub-category elements.

Based on the outcome of the analysis, an average of three (3) and above was classified as being acceptable and everything below three (3) as not acceptable and needs to be addressed.

For ease of analysis and interpretation the following abbreviations were used for divisions:

- Plant Engineering (PE), Production (PROD), Industrial Engineering (IE), Quality (QC), Project (PROJ), Product Industrialisation (PI) and Manpower Development (MD).

Levels were defined as:

- Level 1: Head of division;
- Level 2: Product managers, senior engineers, chemists, scheduling manager;
- Level 3: Shift manager, engineers, training officers;
- Level 4: Coordinators, first line managers, technicians, labour trainers; and
- Level 5: Artisans, operators.

Elements of accountability which were evaluated were:

- Responsibility, ability, means, authority and measure (See section 2.3 for descriptions of these elements).

## 4.2 SUMMARY ANALYSIS AND INTERPRETATION OF THE DIVISIONS, ELEMENTS AND LEVELS

Table 4.1 gives an overview of the average rating of the survey outcome by division and elements according to the respondents.

| Average of Rating | Divisions | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Elements | IE | MD | PI | PE | PROD | PROJ | QC | Grand Total |
| Ability | 3.63 | 3.43 | 3.87 | 3.48 | 3.19 | 3.76 | 3.59 | 3.34 |
| Authority | 3.26 | 2.26 | 3.95 | 3.13 | 2.63 | 3.71 | 3.73 | 2.90 |
| Means | 3.67 | 3.10 | 3.65 | 3.19 | 2.87 | 3.39 | 3.52 | 3.06 |
| Measure | 3.05 | 1.61 | 3.04 | 2.14 | 2.60 | 3.09 | 2.34 | 2.49 |
| Responsibility | 3.30 | 2.42 | 3.72 | 3.25 | 3.09 | 3.44 | 3.49 | 3.17 |
| Grand Total | 3.35 | 2.47 | 3.63 | 3.01 | 2.87 | 3.46 | 3.30 | 2.98 |

**Table 4.1**

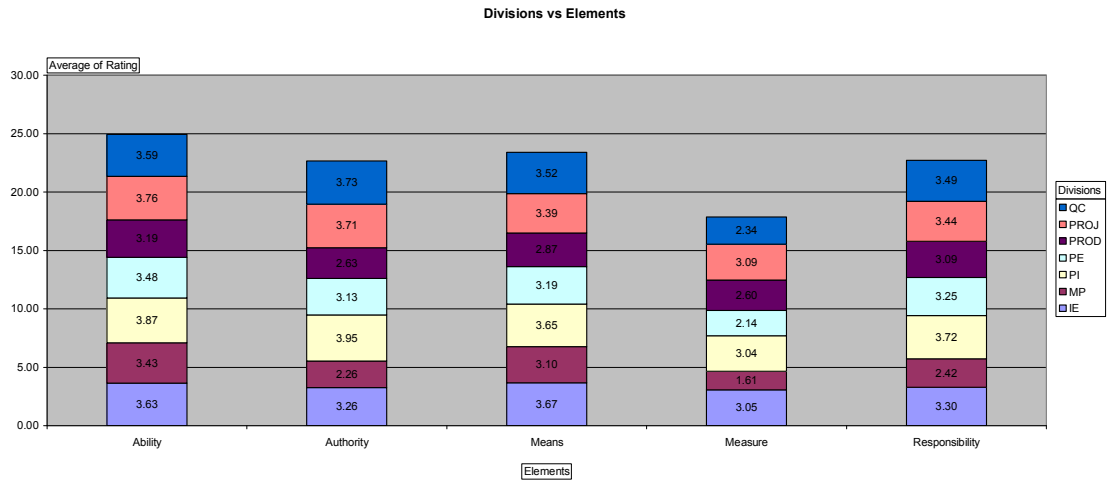
**Divisions and elements**

Source: Survey Questionnaire A and B

From Table 4.1 the following shortfalls were highlighted:

- Manpower Development indicated shortfalls in the areas of authority, measurement and responsibility;
- Plant Engineering indicated a shortfall in the area of measurement;
- Production indicated shortfalls in the areas of authority, means and measurement; and
- Quality indicated a shortfall in the area of measurement.

A visual summation of Table 4.1 is provided in Graph 4.1, relating to the average rating of the respondents on the elements per division.




**Graph 4.1**

**Divisions and elements**

Table 4.2 gives an overview of the average rating of the survey outcome by levels and elements according to the respondents.

| Average of Rating | Levels | | | | | |
|---|---|---|---|---|---|---|
| Elements | 1 | 2 | 3 | 4 | 5 | Grand Total |
| Ability | 3.60 | 3.52 | 3.58 | 3.35 | 3.09 | 3.34 |
| Authority | 3.57 | 3.71 | 3.42 | 2.93 | 2.26 | 2.90 |
| Means | 3.53 | 3.41 | 3.50 | 3.08 | 2.59 | 3.06 |
| Measure | 3.52 | 2.87 | 2.71 | 2.06 | 2.21 | 2.49 |
| Responsibility | 3.72 | 3.64 | 3.43 | 3.22 | 2.74 | 3.17 |
| Grand Total | 3.60 | 3.42 | 3.30 | 2.90 | 2.56 | 2.98 |

**Table 4.2**

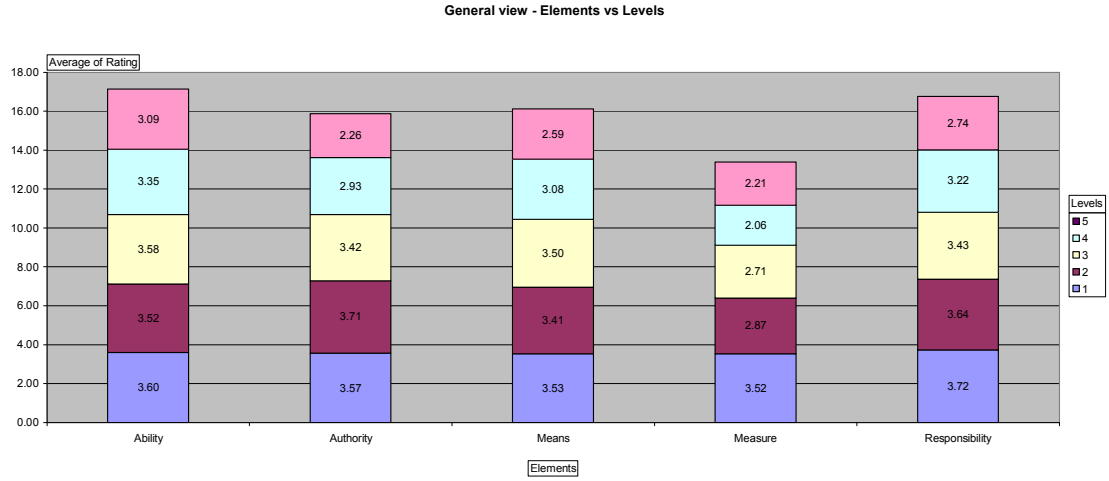
**Levels and elements**

Source: Survey Questionnaire A and B

From Table 4.2 the following shortfalls were highlighted:

- Level 2 indicated a shortfall in the area of measurement;
- Level 3 indicated a shortfall in the area of measurement;
- Level 4 indicated shortfalls in the areas of authority and measurement; and
- Level 5 indicated shortfalls in the areas of authority, means, measurement and responsibility.

A visual summation of Table 4.2 is provided in Graph 4.2, relating to the average rating of the respondents on the elements per level.




**Graph 4.2**

**Levels and elements**

The shortfalls raised become clearer as the data is analysed in more detail per level and per element and the sub-criteria related to those elements.

## 4.3 ANALYSIS AND INTERPRETATION OF EACH SUB-CATEGORY ELEMENT PER DIVISION AND ALL LEVELS

### 4.3.1 Division: Plant Engineering

#### 4.3.1.1 Element: Responsibility

Table 4.3 gives an overview of the average rating of the survey outcome by responsibility sub-criteria for division Plant Engineering on all levels according to the respondents.

| Average Rating | Element | Division | Level | | | |
|---|---|---|---|---|---|---|
| | Responsibility | | | | | |
| | PE | | | | | PE Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| My job description clearly states my responsibilities? | 3.00 | 4.00 | 2.91 | 2.67 | 1.89 | 2.56 |
| I have a job profile/description that explains my job function? | 3.00 | 4.00 | 3.36 | 2.67 | 2.56 | 3.00 |
| My subordinate's job description clearly state their responsibilities? | 3.00 | 4.00 | 2.64 | 2.00 | | 2.63 |
| I hold my subordinates responsible for cost? | 4.00 | 4.00 | 3.20 | 2.67 | | 3.20 |
| I understand what I am responsible for in performing my job function in relations to my job description? | 4.00 | 4.00 | 3.45 | 4.00 | 2.11 | 3.08 |
| In performing your job function I am held responsible for the cost? | 4.00 | 4.00 | 4.00 | 4.00 | 0.89 | 2.88 |
| My immediate superior held responsible for morale? | 4.00 | 4.00 | 3.00 | 4.00 | 2.89 | 3.16 |
| My immediate superior understand what he/she is responsible for in performing their job function? | 4.00 | 4.00 | 3.36 | 3.33 | 2.33 | 3.04 |
| My immediate superior is held responsible for cost? | 4.00 | 4.00 | 3.82 | 4.00 | 2.00 | 3.20 |
| My immediate superior is held responsible for speed? | 4.00 | 4.00 | 3.82 | 4.00 | 2.11 | 3.24 |
| My immediate superior held responsible for quality? | 4.00 | 4.00 | 3.82 | 4.00 | 2.11 | 3.24 |
| I hold my subordinates responsible for morale in performing their job function? | 4.00 | 4.00 | 3.10 | 4.00 | | 3.40 |
| My subordinates understand what they are responsible for in performing their job function? | 3.00 | 4.00 | 3.20 | 3.33 | | 3.27 |
| In performing my job function I am held responsible for morale? | 4.00 | 4.00 | 4.00 | 4.00 | 2.56 | 3.48 |
| In performing my job function I am held responsible for quality? | 4.00 | 4.00 | 4.00 | 4.00 | 2.89 | 3.60 |
| In performing my job function I am held responsible for speed? | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| I hold my subordinates responsible for speed? | 4.00 | 4.00 | 4.00 | 4.00 | | 4.00 |
| I hold my subordinates responsible for quality? | 4.00 | 4.00 | 3.90 | 4.00 | | 3.93 |
| Grand Total | 3.78 | 4.00 | 3.53 | 3.59 | 2.36 | 3.25 |

**Table 4.3**

**Plant Engineering Division and Responsibility sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.3 the following shortfalls were highlighted:

- Levels 3, 4 & 5 indicated that their job descriptions do not clearly state their responsibilities;

- Levels 4 and 5 indicated that their job descriptions do not clearly explain their job function;
- Levels 3 & 4 indicated that their subordinates' job descriptions do not clearly state their responsibilities;
- Level 4 indicated that they do not hold their subordinates responsible for cost;
- Level 5 indicated that they are not sure what they are responsible for in performing their job function in relation to their job description;
- Level 5 indicated that they are not held responsible for cost;
- Level 5 indicated that their superiors are not held responsible for morale;
- Level 5 indicated that their superiors do not understand what they are responsible for in performing their job function;
- Level 5 indicated that their superiors are not held responsible for cost;
- Level 5 indicated that their superiors are not held responsible for speed (unit totals);
- Level 5 indicated that their superiors are not held responsible for quality; and
- Level 5 indicated that they are not held responsible for morale or quality.

### 4.3.1.2 Element: Ability

Table 4.4 gives an overview of the average rating of the survey outcome by ability sub-criteria for division Plant Engineering on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | | | |
|---|---|---|---|---|---|---|
| | Ability | | | | | |
| | PE | | | | | PE Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| My immediate superior has the necessary experience in performing his/her job function? | 3.00 | 4.00 | 3.64 | 2.67 | 3.00 | 3.28 |
| My immediate superior has the necessary skills in performing his/her job function? | 3.00 | 4.00 | 3.82 | 3.00 | 2.67 | 3.28 |
| My immediate superior has the necessary knowledge in performing his/her job function? | 3.00 | 4.00 | 3.64 | 3.00 | 3.00 | 3.32 |
| My subordinates have the necessary knowledge in performing their job function? | 3.00 | 3.00 | 3.60 | 2.67 | | 3.33 |
| My subordinates have the necessary experience in performing their job function? | 3.00 | 3.00 | 3.20 | 2.67 | | 3.07 |
| My subordinates have the necessary skills in performing their job function? | 3.00 | 3.00 | 3.60 | 3.33 | | 3.47 |
| I have the necessary knowledge in performing my job function? | 3.00 | 4.00 | 3.82 | 3.67 | 3.67 | 3.72 |
| I have the necessary experience in performing my job function? | 3.00 | 4.00 | 3.82 | 4.00 | 3.78 | 3.80 |
| I have the necessary skills in performing my job function? | 4.00 | 3.00 | 3.91 | 4.00 | 3.67 | 3.80 |
| Grand Total | 3.11 | 3.56 | 3.68 | 3.22 | 3.30 | 3.48 |

**Table 4.4**

**Plant Engineering Division and Ability sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.4 the following shortfalls were highlighted:

- Level 4 indicated that their superiors do not have the experience to perform their job function;
- Level 5 indicated that their superiors do not have the skills to perform their job function;
- Level 4 indicated that their subordinates do not have the knowledge to perform their job function; and

- Level 4 indicated that their subordinates do not have the experience to perform their job function.

#### 4.3.1.3 Element: Means

Table 4.5 gives an overview of the average rating of the survey outcome by means of sub-criteria for the division Plant Engineering on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | | | |
|---|---|---|---|---|---|---|
| | Means | | | | | |
| | PE | | | | | PE Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| The procedures are in place to perform my job function? | 3.00 | 3.00 | 3.64 | 3.67 | 1.22 | 2.72 |
| The procedures are in place for my subordinates to perform their job function? | 3.00 | 3.00 | 3.60 | 3.67 | | 3.53 |
| The procedures are in place for my superior to perform his/her job function? | 3.00 | 4.00 | 3.45 | 3.67 | 2.22 | 3.04 |
| The systems are in place to perform my job function? | 2.00 | 3.00 | 3.64 | 2.67 | 1.56 | 2.68 |
| The systems are in place for my subordinates to perform their job function? | 2.00 | 3.00 | 3.60 | 2.33 | | 3.20 |
| The systems are in place for my superior to perform his/her job function? | 2.00 | 4.00 | 3.45 | 2.33 | 1.78 | 2.68 |
| I have adequate tools to perform my job function? | 4.00 | 4.00 | 3.91 | 3.00 | 2.67 | 3.36 |
| My subordinates have adequate tools to perform their job function? | 4.00 | 4.00 | 4.00 | 3.00 | | 3.80 |
| My superior have adequate tools to perform his/her job function? | 4.00 | 4.00 | 3.73 | 4.00 | 3.44 | 3.68 |
| The standard of equipment is acceptable to perform my job function? | 4.00 | 4.00 | 3.73 | 3.33 | 2.22 | 3.16 |
| The standard of equipment for my subordinates are acceptable to perform their job function? | 4.00 | 4.00 | 3.70 | 3.00 | | 3.60 |
| The standard of equipment for my superior is acceptable to perform his/her job function? | 4.00 | 4.00 | 3.82 | 3.33 | 2.67 | 3.36 |
| Grand Total | 3.25 | 3.67 | 3.69 | 3.17 | 2.22 | 3.19 |

**Table 4.5**

**Plant Engineering Division and Means sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.5 the following shortfalls were highlighted:

- Level 5 indicated that the procedures are not in place to perform their job function or in place for their superior to perform his/her job function;
- Level 5 indicated that the systems are not in place to perform their job function;

- Level 4 indicated that the systems for subordinates are not in place to perform their job function;
- Levels 4 & 5 indicated that the systems for superiors are not in place to perform their job function;
- Level 5 indicated that they do not have adequate tools to perform their job functions; and
- Level 5 indicated that neither their own nor their superior's standard of equipment is acceptable.

#### 4.3.1.4 Element: Authority

Table 4.6 gives an overview of the average rating of the survey outcome by authority sub-criteria for the division Plant Engineering on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | | | |
|---|---|---|---|---|---|---|
| | Authority | | | | | |
| | PE | | | | | PE Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| I am empowered to make decisions relating to my job function? | 4.00 | 4.00 | 3.55 | 4.00 | 2.78 | 3.36 |
| I am part of decision making relating to my job function? | 4.00 | 4.00 | 3.55 | 4.00 | 2.67 | 3.32 |
| My subordinates can change anything in their process which can positively impact on output? | 4.00 | 3.00 | 3.00 | 0.00 | | 2.47 |
| My new ideas and suggestions are acknowledged and handled appropriately? | 4.00 | 4.00 | 3.45 | 3.67 | 1.22 | 2.72 |
| My immediate superior change anything in his/her process which can positively impact on output? | 4.00 | 4.00 | 3.82 | 4.00 | 1.89 | 3.16 |
| I can change anything in my process which can positively impact on output? | 4.00 | 4.00 | 3.73 | 3.67 | 2.22 | 3.20 |
| My immediate superior can stop production/process due to anything that has a negative impact on his/her output? | 4.00 | 4.00 | 3.91 | 4.00 | 1.56 | 3.08 |
| I can stop production/process due to anything that has a negative impact on my output? | 4.00 | 4.00 | 3.64 | 2.67 | 1.78 | 2.88 |
| My subordinates are empowered to make decisions relating to their job function? | 4.00 | 4.00 | 3.60 | 0.67 | | 3.07 |
| My subordinates can stop production/process due to anything that has a negative impact on their output? | 4.00 | 3.00 | 2.80 | 1.33 | | 2.60 |
| My immediate superior is empowered to make decisions relating his/her job function? | 4.00 | 4.00 | 3.73 | 4.00 | 3.56 | 3.72 |
| I have the opportunity to bring new ideas and suggestions to your superior's attention? | 4.00 | 4.00 | 3.91 | 4.00 | 2.67 | 3.48 |
| Grand Total | 4.00 | 3.83 | 3.57 | 3.00 | 2.26 | 3.13 |

**Table 4.6**

**Plant Engineering Division and Authority sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.6 the following shortfalls were highlighted:

- Level 5 indicated that they are not empowered to make decisions relating to their job function;
- Level 5 indicated that they are not part of decision making relating to their job function;
- Level 4 indicated that their subordinates cannot change anything that will have a positive impact on their output;
- Level 5 indicated that new ideas or suggestions are not acknowledged and handled appropriately;
- Level 5 indicated that their superiors cannot change anything in their process that will have a positive impact on output;
- Level 5 indicated that they cannot change anything in their process that will have a positive impact on output;
- Level 5 indicated that neither them nor their superiors can stop production/process if it has a negative impact on their output;
- Level 4 indicated that their subordinates are not empowered to make decisions relating to their job function;
- Levels 3 & 4 indicated that their subordinates cannot stop production/process if it has a negative impact on their output;
- Level 5 indicated that their superiors are not empowered to make decisions relating to their job functions; and
- Level 5 indicated that they do not have the opportunity to bring new ideas or suggestions to their superior's attention.

### 4.3.1.5 Element: Measure

Table 4.7 gives an overview of the average rating of the survey outcome by measure sub-criteria for division Plant Engineering on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | | | |
|---|---|---|---|---|---|---|
| | Measure | | | | | |
| | PE | | | | | PE Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| I am rewarded for over performance? | 4.00 | 4.00 | 0.45 | 0.00 | 0.00 | 0.52 |
| I reward my subordinates for over performance? | 4.00 | 0.00 | 0.50 | 0.00 | | 0.60 |
| I measure my subordinates againts cost? | 4.00 | 3.00 | 2.70 | 0.00 | | 2.27 |
| I give recognition to my superior and any other person for doing their job function well? | 3.00 | 4.00 | 3.18 | 1.33 | 1.33 | 2.32 |
| I receive recognition for performing my job function well? | 3.00 | 4.00 | 3.00 | 3.33 | 0.67 | 2.24 |
| I measure my subordinates againts morale? | 4.00 | 3.00 | 2.60 | 0.00 | | 2.20 |
| My performance is formally measured against cost? | 4.00 | 3.00 | 3.27 | 0.00 | 1.11 | 2.12 |
| My performance is formally measured against morale? | 4.00 | 3.00 | 2.55 | 0.00 | 1.56 | 1.96 |
| My performance is formally measured against quality? | 4.00 | 3.00 | 2.91 | 0.00 | 0.67 | 1.80 |
| I measure my subordinates against quality? | 4.00 | 3.00 | 3.00 | 0.00 | | 2.47 |
| I measure my subordinates against speed? | 4.00 | 3.00 | 3.00 | 0.00 | | 2.47 |
| My performance is formally measured against speed? | 4.00 | 3.00 | 2.73 | 0.00 | 1.11 | 1.88 |
| I often give recognition to subordinates for performing their job function well? | 3.00 | 4.00 | 3.45 | 3.67 | | 3.50 |
| I am disciplined for under performance? | 4.00 | 4.00 | 3.82 | 2.67 | 1.44 | 2.84 |
| I discipline my subordinates for under performance? | 4.00 | 4.00 | 3.70 | 3.67 | | 3.73 |
| Grand Total | 3.80 | 3.20 | 2.73 | 0.98 | 0.99 | 2.14 |

**Table 4.7**

**Plant Engineering Division and Measure sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.7 the following shortfalls were highlighted:

- Levels 3, 4 & 5 indicated that they are not rewarded for over-performance;
- Levels 2, 3 & 4 indicated that they do not reward their subordinates for over-performance;
- Levels 3 & 4 indicated that they do measure their subordinates against cost;
- Levels 4 & 5 indicated that they do not give anybody recognition for doing their job well;

- Level 5 indicated they received no recognition for doing their job well;
- Levels 3 & 4 indicated they do not measure their subordinates against morale;
- Levels 3, 4 & 5 indicated they are not measured against cost, morale, speed or quality, except level 3 who are measured against cost;
- Level 4 indicated they do not measure their subordinates against speed or quality;
- Levels 3, 4 & 5 indicated they do not measure their subordinates against speed; and
- Levels 4 & 5 indicated they are not disciplined for under-performance.

### 4.3.2 Division: Production

#### 4.3.2.1 Element: Responsibility

Table 4.8 gives an overview of the average rating of the survey outcome by responsibility sub-criteria for division Production on all levels according to the respondents.

| Average Rating | Element | Division | Level | | | |
|---|---|---|---|---|---|---|
| | Responsibility | | | | | |
| | PROD | | | | | PROD Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| My job description clearly states my responsibilities? | 0.00 | 2.57 | 3.50 | 2.08 | 1.91 | 2.12 |
| I have a job profile/description that explains my job function? | 4.00 | 3.43 | 3.63 | 2.31 | 2.21 | 2.48 |
| My subordinate's job description clearly state their responsibilities? | 0.00 | 2.43 | 3.50 | 2.69 | | 2.76 |
| I hold my subordinates responsible for cost? | 4.00 | 3.86 | 2.88 | 1.85 | | 2.69 |
| I understand what I am responsible for in performing my job function in relations to my job description? | 4.00 | 3.57 | 3.50 | 2.92 | 2.55 | 2.80 |
| In performing your job function I am held responsible for the cost? | 4.00 | 4.00 | 3.63 | 3.08 | 2.71 | 2.98 |
| My immediate superior held responsible for morale? | 4.00 | 4.00 | 3.75 | 3.31 | 2.57 | 2.93 |
| My immediate superior understand what he/she is responsible for in performing their job function? | 4.00 | 3.57 | 3.00 | 3.23 | 2.79 | 2.95 |
| My immediate superior is held responsible for cost? | 4.00 | 4.00 | 3.88 | 3.69 | 2.59 | 3.01 |
| My immediate superior is held responsible for speed? | 4.00 | 4.00 | 3.88 | 3.77 | 2.88 | 3.21 |
| My immediate superior held responsible for quality? | 4.00 | 4.00 | 3.88 | 3.77 | 2.80 | 3.16 |
| I hold my subordinates responsible for morale in performing their job function? | 4.00 | 4.00 | 3.13 | 3.38 | | 3.48 |
| My subordinates understand what they are responsible for in performing their job function? | 4.00 | 3.57 | 3.25 | 3.15 | | 3.31 |
| In performing my job function I am held responsible for morale? | 4.00 | 4.00 | 3.75 | 4.00 | 3.38 | 3.56 |
| In performing my job function I am held responsible for quality? | 4.00 | 4.00 | 3.38 | 4.00 | 3.66 | 3.72 |
| In performing my job function I am held responsible for speed? | 4.00 | 4.00 | 3.88 | 4.00 | 3.46 | 3.64 |
| I hold my subordinates responsible for speed? | 4.00 | 4.00 | 3.75 | 3.92 | | 3.90 |
| I hold my subordinates responsible for quality? | 4.00 | 4.00 | 3.50 | 3.92 | | 3.83 |
| Grand Total | 3.56 | 3.72 | 3.53 | 3.28 | 2.79 | 3.09 |

**Table 4.8**

**Production Division and Responsibility sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.8 the following shortfalls were highlighted:

- Levels 1, 2, 4 & 5 indicated that their job descriptions do not clearly state their responsibilities;
- Levels 4 and 5 indicated that their job descriptions do not clearly explain their job function;
- Levels 1, 2 & 4 indicated that their subordinates' job descriptions do not clearly state their responsibilities;
- Levels 3 & 4 indicated that they do not hold their subordinates responsible for cost;
- Levels 4 & 5 indicated that they are not sure what they are responsible for in performing their job function in relation to their job description;
- Level 5 indicated that they are not held responsible for cost;

- Level 5 indicated that their superiors are not held responsible for cost, quality, speed or morale; and
- Level 5 indicated that their superiors do not understand what they are responsible for in performing their job function.

#### 4.3.2.2 Element: Ability

Table 4.9 gives an overview of the average rating of the survey outcome by ability sub-criteria for division Production on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | | | |
|---|---|---|---|---|---|---|
| | Ability | | | | | |
| | PROD | | | | | PROD Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| My immediate superior has the necessary experience in performing his/her job function? | 4.00 | 3.43 | 3.13 | 2.69 | 2.71 | 2.82 |
| My immediate superior has the necessary skills in performing his/her job function? | 3.00 | 3.71 | 3.38 | 2.62 | 2.59 | 2.76 |
| My immediate superior has the necessary knowledge in performing his/her job function? | 4.00 | 3.71 | 3.25 | 3.00 | 2.61 | 2.84 |
| My subordinates have the necessary knowledge in performing their job function? | 3.00 | 3.14 | 3.13 | 3.15 | | 3.14 |
| My subordinates have the necessary experience in performing their job function? | 3.00 | 3.14 | 3.38 | 3.62 | | 3.41 |
| My subordinates have the necessary skills in performing their job function? | 3.00 | 2.71 | 3.25 | 3.54 | | 3.24 |
| I have the necessary knowledge in performing my job function? | 3.00 | 3.86 | 3.63 | 3.62 | 3.38 | 3.47 |
| I have the necessary experience in performing my job function? | 3.00 | 3.43 | 3.75 | 3.92 | 3.52 | 3.59 |
| I have the necessary skills in performing my job function? | 3.00 | 3.29 | 3.88 | 3.85 | 3.48 | 3.55 |
| Grand Total | 3.22 | 3.38 | 3.42 | 3.33 | 3.05 | 3.19 |

**Table 4.9**

**Production Division and Ability sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.9 the following shortfalls were highlighted:

- Levels 4 & 5 indicated that their superiors do not have the experience, skills or knowledge to perform their job function, except level 4 who stated that their superiors have the necessary knowledge; and

- Level 2 indicated that their subordinates do not have the skills to perform their job function;

#### 4.3.2.3 Element: Means

Table 4.10 gives an overview of the average rating of the survey outcome by means sub-criteria for division Production on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | | | |
|---|---|---|---|---|---|---|
| | Means | | | | | |
| | PROD | | | | | PROD Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| The procedures are in place to perform my job function? | 3.00 | 3.00 | 3.00 | 3.00 | 2.73 | 2.82 |
| The procedures are in place for my subordinates to perform their job function? | 3.00 | 3.00 | 2.75 | 3.00 | | 2.93 |
| The procedures are in place for my superior to perform his/her job function? | 3.00 | 3.14 | 3.38 | 3.46 | 2.52 | 2.80 |
| The systems are in place to perform my job function? | 3.00 | 3.14 | 2.38 | 2.46 | 2.50 | 2.54 |
| The systems are in place for my subordinates to perform their job function? | 3.00 | 2.86 | 2.50 | 2.23 | | 2.48 |
| The systems are in place for my superior to perform his/her job function? | 2.00 | 3.14 | 3.25 | 2.69 | 2.46 | 2.62 |
| I have adequate tools to perform my job function? | 4.00 | 3.86 | 3.50 | 3.46 | 2.96 | 3.18 |
| My subordinates have adequate tools to perform their job function? | 4.00 | 3.43 | 3.63 | 3.54 | | 3.55 |
| My superior have adequate tools to perform his/her job function? | 4.00 | 3.71 | 3.63 | 3.77 | 2.52 | 2.93 |
| The standard of equipment is acceptable to perform my job function? | 4.00 | 3.71 | 3.63 | 3.38 | 2.73 | 3.01 |
| The standard of equipment for my subordinates are acceptable to perform their job function? | 4.00 | 3.14 | 3.13 | 2.15 | | 2.72 |
| The standard of equipment for my superior is acceptable to perform his/her job function? | 4.00 | 3.57 | 3.88 | 3.69 | 2.55 | 2.95 |
| Grand Total | 3.42 | 3.31 | 3.22 | 3.07 | 2.62 | 2.87 |

**Table 4.10**

**Production Division and Means sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.10 the following shortfalls were highlighted:

- Level 5 indicated that the procedures, systems, standard of equipment and adequate tools are not in place to perform their job function or in place for their superior to perform his/her job function;

- Level 3 indicated that the procedures for their subordinates are not in place to perform their job function;
- Level 5 indicated that the procedures for their superiors are not in place to perform their job function;
- Levels 3, 4 & 5 indicated that the systems are not in place, levels 2, 3, 4 indicated that the systems for their subordinates are not in place, and levels 4 & 5 indicated that the systems for their superiors are not in place to perform their job function; and
- Level 5 indicated that adequate tools and standard of equipment are not in place for their superiors to perform their job functions.

#### 4.3.2.4 Element: Authority

Table 4.11 gives an overview of the average rating of the survey outcome by authority sub-criteria for division Production on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | | | |
|---|---|---|---|---|---|---|
| | Authority | | | | | |
| | PROD | | | | | PROD Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| I am empowered to make decisions relating to my job function? | 4.00 | 3.43 | 2.38 | 2.54 | 1.34 | 1.82 |
| I am part of decision making relating to my job function? | 4.00 | 3.86 | 2.38 | 2.08 | 1.64 | 1.99 |
| My subordinates can change anything in their process which can positively impact on output? | 4.00 | 3.29 | 2.13 | 2.23 | | 2.52 |
| My new ideas and suggestions are acknowledged and handled appropriately? | 4.00 | 3.71 | 3.25 | 2.54 | 1.89 | 2.29 |
| My immediate superior change anything in his/her process which can positively impact on output? | 4.00 | 4.00 | 3.75 | 2.85 | 2.45 | 2.78 |
| I can change anything in my process which can positively impact on output? | 4.00 | 3.86 | 2.75 | 3.15 | 2.50 | 2.75 |
| My immediate superior can stop production/process due to anything that has a negative impact on his/her output? | 4.00 | 4.00 | 3.88 | 3.92 | 2.38 | 2.91 |
| I can stop production/process due to anything that has a negative impact on my output? | 4.00 | 3.71 | 3.63 | 3.46 | 2.63 | 2.95 |
| My subordinates are empowered to make decisions relating to their job function? | 4.00 | 3.43 | 2.00 | 2.92 | | 2.83 |
| My subordinates can stop production/process due to anything that has a negative impact on their output? | 4.00 | 3.57 | 3.25 | 3.15 | | 3.31 |
| My immediate superior is empowered to make decisions relating his/her job function? | 3.00 | 4.00 | 2.88 | 3.23 | 2.27 | 2.62 |
| I have the opportunity to bring new ideas and suggestions to your superior's attention? | 4.00 | 4.00 | 3.75 | 3.85 | 3.00 | 3.29 |
| Grand Total | 3.92 | 3.74 | 3.00 | 2.99 | 2.23 | 2.63 |

**Table 4.11**

**Production Division and Authority sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.11 the following shortfalls were highlighted:

- Levels 3, 4 & 5 indicated that they are not empowered to make decisions relating to their job function;
- Levels 3, 4 & 5 indicated that they are not part of decision making relating to their job function;
- Levels 3 & 4 indicated that their subordinates cannot change anything in their process that will have a positive impact on their output;
- Levels 4 & 5 indicated that new ideas or suggestions are not acknowledged and handled appropriately;
- Levels 4 & 5 indicated that their superiors cannot change anything in their process that will have a positive impact on output;
- Levels 3 & 5 indicated that they cannot change anything in their process that will have a positive impact on output;

- Level 5 indicated that neither they nor their superiors can stop production/process if it has a negative impact on their output;
- Levels 3 & 4 indicated that their subordinates are not empowered to make decisions relating to their job function; and
- Levels 3 & 5 indicated that their superiors are not empowered to make decisions relating to their job functions.

#### 4.3.2.5 Element: Measure

Table 4.12 gives an overview of the average rating of the survey outcome by measure sub-criteria for division Production on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | | | |
|---|---|---|---|---|---|---|
| | Measure | | | | | |
| | PROD | | | | | PROD Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| I am rewarded for over performance? | 4.00 | 1.71 | 0.50 | 0.31 | 0.40 | 0.55 |
| I reward my subordinates for over performance? | 4.00 | 1.29 | 0.25 | 1.54 | | 1.21 |
| I measure my subordinates againts cost? | 4.00 | 3.14 | 3.25 | 1.00 | | 2.24 |
| I give recognition to my superior and any other person for doing their job function well? | 3.00 | 3.14 | 2.13 | 1.08 | 2.45 | 2.27 |
| I receive recognition for performing my job function well? | 3.00 | 3.43 | 2.50 | 1.92 | 2.38 | 2.41 |
| I measure my subordinates againts morale? | 4.00 | 3.71 | 3.38 | 2.38 | | 3.03 |
| My performance is formally measured against cost? | 4.00 | 3.71 | 3.50 | 2.85 | 2.27 | 2.61 |
| My performance is formally measured against morale? | 4.00 | 3.71 | 3.50 | 3.15 | 2.52 | 2.82 |
| My performance is formally measured against quality? | 4.00 | 3.71 | 3.50 | 3.08 | 2.70 | 2.93 |
| I measure my subordinates against quality? | 4.00 | 3.71 | 3.25 | 2.08 | | 2.86 |
| I measure my subordinates against speed? | 4.00 | 3.71 | 3.38 | 2.46 | | 3.07 |
| My performance is formally measured against speed? | 4.00 | 3.71 | 3.50 | 3.15 | 2.88 | 3.06 |
| I often give recognition to subordinates for performing their job function well? | 3.00 | 3.29 | 3.50 | 3.38 | | 3.38 |
| I am disciplined for under performance? | 4.00 | 4.00 | 3.88 | 3.85 | 3.54 | 3.66 |
| I discipline my subordinates for under performance? | 4.00 | 4.00 | 3.50 | 3.85 | | 3.79 |
| Grand Total | 3.80 | 3.33 | 2.90 | 2.41 | 2.39 | 2.60 |

**Table 4.12**

**Production and Measure sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.12 the following shortfalls were highlighted:

- Levels 3, 4 & 5 indicated that they are not rewarded for over-performance;
- Levels 2, 3 & 4 indicated that they do not reward their subordinates for over-performance;
- Levels 3 & 4 indicated that they do measure their subordinates against cost;
- Levels 4 & 5 indicated that they do not give anybody recognition for doing their job well;
- Level 5 indicated they received no recognition for doing their job well;
- Levels 3 & 4 indicated they do not measure their subordinates against morale;
- Levels 3, 4 & 5 indicated they are not measured against cost, morale, speed or quality, except level 3 who are measured against cost;
- Level 4 indicated they do not measure their subordinates against speed or quality; and
- Levels 3, 4 & 5 indicated they do not measure their subordinates against speed.

### 4.3.3 Division: Industrial Engineering

This is a small division with only three levels.

### 4.3.3.1 Element: Responsibility

Table 4.13 gives an overview of the average rating of the survey outcome by responsibility sub-criteria for division Industrial Engineering on all levels according to the respondents.

| Average Rating | Element | Division | Level |
|---|---|---|---|
| | Responsibility | | |
| | IE | | IE Total |
| Sub criteria | 2 | 3 | |
| My job description clearly states my responsibilities? | 2.00 | 2.67 | 2.50 |
| I have a job profile/description that explains my job function? | 3.00 | 2.67 | 2.75 |
| My subordinate's job description clearly state their responsibilities? | 4.00 | | 4.00 |
| I hold my subordinates responsible for cost? | 3.00 | | 3.00 |
| I understand what I am responsible for in performing my job function in relations to my job description? | 3.00 | 3.67 | 3.50 |
| In performing your job function I am held responsible for the cost? | 1.00 | 4.00 | 3.25 |
| My immediate superior is held responsible for morale? | 4.00 | 2.67 | 3.00 |
| My immediate superior understand what he/she is responsible for in performing their job function? | 4.00 | 3.67 | 3.75 |
| My immediate superior is held responsible for cost? | 4.00 | 4.00 | 4.00 |
| My immediate superior is held responsible for speed? | 4.00 | 3.00 | 3.25 |
| My immediate superior held responsible for quality? | 4.00 | 4.00 | 4.00 |
| I hold my subordinates responsible for morale in performing their job function? | 2.00 | | 2.00 |
| My subordinates understand what they are responsible for in performing their job function? | 4.00 | | 4.00 |
| In performing my job function I am held responsible for morale? | 4.00 | 3.67 | 3.75 |
| In performing my job function I am held responsible for quality? | 4.00 | 1.00 | 1.75 |
| In performing my job function I am held responsible for speed? | 4.00 | 3.67 | 3.75 |
| I hold my subordinates responsible for speed? | 4.00 | | 4.00 |
| I hold my subordinates responsible for quality? | 4.00 | | 4.00 |
| Grand Total | 3.44 | 3.22 | 3.30 |

**Table 4.13**

**Industrial Engineering Division and Responsibility sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.13 the following shortfalls were highlighted:

- Levels 2 & 3 indicated that their job descriptions do not clearly state their responsibilities;
- Level 3 indicated that their job descriptions do not clearly explain their job function;
- Level 2 indicated that they are not held responsible for cost;

- Level 3 indicated that their superiors are not held responsible for morale; and level 2 do not hold their subordinates responsible for morale; and
- Levels 2 & 3 indicated that they are not held responsible for quality.

#### 4.3.3.2 Element: Ability

Table 4.14 gives an overview of the average rating of the survey outcome by ability sub-criteria for division Industrial Engineering on all levels according to the respondents.

| Average of Rating | Element | Devision | Level |
|---|---|---|---|
| | Ability | | |
| | IE | | IE Total |
| Sub criteria | 2 | 3 | |
| My immediate superior has the necessary experience in performing his/her job function? | 3.00 | 3.67 | 3.50 |
| My immediate superior has the necessary skills in performing his/her job function? | 3.00 | 4.00 | 3.75 |
| My immediate superior has the necessary knowledge in performing his/her job function? | 3.00 | 4.00 | 3.75 |
| My subordinates have the necessary knowledge in performing their job function? | 3.00 | | 3.00 |
| My subordinates have the necessary experience in performing their job function? | 3.00 | | 3.00 |
| My subordinates have the necessary skills in performing their job function? | 3.00 | | 3.00 |
| I have the necessary knowledge in performing my job function? | 4.00 | 3.67 | 3.75 |
| I have the necessary experience in performing my job function? | 4.00 | 3.67 | 3.75 |
| I have the necessary skills in performing my job function? | 4.00 | 3.67 | 3.75 |
| Grand Total | 3.33 | 3.78 | 3.63 |

**Table 4.14**

**Industrial Engineering Division and Ability sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.14 no shortfalls were highlighted, although certain areas were identified as needing minor improvement.

#### 4.3.3.3 Element: Means

Table 4.15 gives an overview of the average rating of the survey outcome by means sub-criteria for division Industrial Engineering on all levels according to the respondents.

| Average of Rating | Element | Devision | Level |
|---|---|---|---|
| | Means | | |
| | IE | | IE Total |
| Sub criteria | 2 | 3 | |
| The procedures are in place to perform my job function? | 3.00 | 3.33 | 3.25 |
| The procedures are in place for my subordinates to perform their job function? | 3.00 | | 3.00 |
| The procedures are in place for my superior to perform his/her job function? | 3.00 | 4.00 | 3.75 |
| The systems are in place to perform my job function? | 3.00 | 3.33 | 3.25 |
| The systems are in place for my subordinates to perform their job function? | 3.00 | | 3.00 |
| The systems are in place for my superior to perform his/her job function? | 4.00 | 4.00 | 4.00 |
| I have adequate tools to perform my job function? | 4.00 | 3.67 | 3.75 |
| My subordinates have adequate tools to perform their job function? | 4.00 | | 4.00 |
| My superior have adequate tools to perform his/her job function? | 4.00 | 4.00 | 4.00 |
| The standard of equipment is acceptable to perform my job function? | 4.00 | 3.33 | 3.50 |
| The standard of equipment for my subordinates are acceptable to perform their job function? | 4.00 | | 4.00 |
| The standard of equipment for my superior is acceptable to perform his/her job function? | 4.00 | 4.00 | 4.00 |
| Grand Total | 3.58 | 3.71 | 3.67 |

**Table 4.15**

**Industrial Engineering Division and Means sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.15 no shortfalls were highlighted, although certain procedures and systems were identified as needing minor improvement.

### 4.3.3.4 Element: Authority

Table 4.16 gives an overview of the average rating of the survey outcome by authority sub-criteria for division Industrial Engineering on all levels according to the respondents.

| Average of Rating | Element | Devision | Level |
|---|---|---|---|
| | Authority | | |
| | IE | | IE Total |
| Sub criteria | 2 | 3 | |
| I am empowered to make decisions relating to my job function? | 3.00 | 3.33 | 3.25 |
| I am part of decision making relating to my job function? | 4.00 | 3.33 | 3.50 |
| My subordinates can change anything in their process which can positively impact on output? | 3.00 | | 3.00 |
| My new ideas and suggestions are acknowledged and handled appropriately? | 4.00 | 3.33 | 3.50 |
| My immediate superior change anything in his/her process which can positively impact on output? | 4.00 | 4.00 | 4.00 |
| I can change anything in my process which can positively impact on output? | 4.00 | 4.00 | 4.00 |
| My immediate superior can stop production/process due to anything that has a negative impact on his/her output? | 0.00 | 2.67 | 2.00 |
| I can stop production/process due to anything that has a negative impact on my output? | 3.00 | 2.67 | 2.75 |
| My subordinates are empowered to make decisions relating to their job function? | 0.00 | | 0.00 |
| My subordinates can stop production/process due to anything that has a negative impact on their output? | 0.00 | | 0.00 |
| My immediate superior is empowered to make decisions relating his/her job function? | 4.00 | 4.00 | 4.00 |
| I have the opportunity to bring new ideas and suggestions to your superior's attention? | 4.00 | 4.00 | 4.00 |
| Grand Total | 2.75 | 3.48 | 3.26 |

**Table 4.16**

**Industrial Engineering Division and Authority sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.16 the following shortfalls were highlighted:

- Levels 2 & 3 indicated that their superiors cannot stop production/process if it has a negative impact on their output;
- Level 3 indicated that they cannot stop production/process if it has a negative impact on their output; and
- Level 2 indicated that their subordinates are not empowered to make decisions relating to their job function, and cannot stop production/process if it has a negative impact on their output.

#### 4.3.3.5 Element: Measure

Table 4.17 gives an overview of the average rating of the survey outcome by measure sub-criteria for division Industrial Engineering on all levels according to the respondents.

| Average of Rating | Element | Devision | Level |
|---|---|---|---|
| | Measure | | |
| | IE | | IE Total |
| Sub criteria | 2 | 3 | |
| I am rewarded for over performance? | 0.00 | 1.00 | 0.75 |
| I reward my subordinates for over performance? | 0.00 | | 0.00 |
| I measure my subordinates againts cost? | 4.00 | | 4.00 |
| I give recognition to my superior and any other person for doing their job function well? | 3.00 | 2.33 | 2.50 |
| I receive recognition for performing my job function well? | 2.00 | 4.00 | 3.50 |
| I measure my subordinates againts morale? | 3.00 | | 3.00 |
| My performance is formally measured against cost? | 3.00 | 4.00 | 3.75 |
| My performance is formally measured against morale? | 2.00 | 4.00 | 3.50 |
| My performance is formally measured against quality? | 4.00 | 1.33 | 2.00 |
| I measure my subordinates against quality? | 4.00 | | 4.00 |
| I measure my subordinates against speed? | 4.00 | | 4.00 |
| My performance is formally measured against speed? | 4.00 | 4.00 | 4.00 |
| I often give recognition to subordinates for performing their job function well? | 4.00 | | 4.00 |
| I am disciplined for under performance? | 4.00 | 4.00 | 4.00 |
| I discipline my subordinates for under performance? | 4.00 | | 4.00 |
| Grand Total | 3.00 | 3.08 | 3.05 |

**Table 4.17**

**Industrial Engineering Division and Measure sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.17 the following shortfalls were highlighted:

- Levels 2 & 3 indicated that they are not rewarded for over-performance;
- Level 2 indicated that they do not reward their subordinates for over-performance;

- Level 3 indicated that they do not give any recognition and level 2 do not receive any recognition; and
- Level 2 indicated they are not measured against cost, and level 3 are not measured against quality.

### 4.3.4 Division: Quality

#### 4.3.4.1 Element: Responsibility

Table 4.18 gives an overview of the average rating of the survey outcome by responsibility sub-criteria for division Quality on all levels according to the respondents.

| Average of Rating | Element | Division | Level | | | |
|---|---|---|---|---|---|---|
| | Responsibility | | | | | |
| | QUALITY | | | | | QUALITY Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| I have a job profile/description that explains my job function? | 4.00 | 3.86 | 3.00 | 4.00 | 4.00 | 3.59 |
| I hold my subordinates responsible for cost? | 4.00 | 2.00 | 4.00 | | | 2.67 |
| I hold my subordinates responsible for morale? | 4.00 | 2.83 | 4.00 | | | 3.22 |
| I hold my subordinates responsible for quality? | 4.00 | 4.00 | 4.00 | | | 4.00 |
| I hold my subordinates responsible for speed? | 4.00 | 3.00 | 4.00 | | | 3.33 |
| I understand what I am responsible for in performing my job function in relations to my Job description? | 4.00 | 4.00 | 3.50 | 4.00 | 4.00 | 3.82 |
| My subordinates understand what they are responsible for in performing their job function? | 4.00 | 3.67 | 3.00 | | | 3.56 |
| My immediate superior understand what he/she is responsible for in performing their job function? | 4.00 | 3.86 | 3.17 | 4.00 | 4.00 | 3.65 |
| My job description clearly state my responsibilities? | 4.00 | 2.86 | 2.50 | 4.00 | 4.00 | 3.00 |
| My subordinate's job description clearly state their responsibilities? | 3.00 | 3.00 | 2.50 | | | 2.89 |
| In performing my job function I am held responsible for quality? | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| In performing my job function I am held responsible for speed? | 4.00 | 3.14 | 3.33 | 4.00 | 0.00 | 3.18 |
| In performing my job function I am held responsible for the cost? | 4.00 | 3.43 | 2.17 | 4.00 | 4.00 | 3.12 |
| In performing my job function I am held responsible for the moral? | 4.00 | 3.86 | 2.67 | 4.00 | 0.00 | 3.24 |
| My immediate superior is held responsible for cost? | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| My immediate superior is held responsible for morale? | 4.00 | 3.86 | 2.83 | 4.00 | 4.00 | 3.53 |
| My immediate superior is held responsible for quality? | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| My immediate superior is held responsible for speed? | 4.00 | 2.86 | 4.00 | 4.00 | 4.00 | 3.53 |
| Grand Total | 3.94 | 3.48 | 3.31 | 4.00 | 3.33 | 3.50 |

**Table 4.18**

**Quality Division and Responsibility sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.18 the following shortfalls were highlighted:

- Level 2 indicated that they do not hold their subordinates responsible for costs or morale;
- Levels 2 & 3 indicated that their job descriptions do not clearly state their responsibilities;
- Level 3 indicated that their subordinates job descriptions do not clearly state their responsibility;
- Level 3 indicated that they are not held responsible for cost or morale; and
- Level 3 indicated that their superiors are not held responsible for morale and level 2's superiors are not held responsible for speed.

#### 4.3.4.2 Element: Ability

Table 4.19 gives an overview of the average rating of the survey outcome by ability sub-criteria for division Quality on all levels according to the respondents.

| Average of Rating | Element | Division | Level | | | |
|---|---|---|---|---|---|---|
| | Ability | | | | | |
| | QUALITY | | | | | QUALITY Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| I have the necessary experience in performing my job function? | 4.00 | 3.57 | 3.50 | 4.00 | 4.00 | 3.65 |
| I have the necessary knowledge in performing my job function? | 4.00 | 3.71 | 3.50 | 4.00 | 3.00 | 3.65 |
| I have the necessary skills in performing my job function? | 4.00 | 3.71 | 3.83 | 4.00 | 4.00 | 3.82 |
| My subordinates have the necessary experience in performing their job function? | 3.00 | 3.17 | 2.50 | | | 3.00 |
| My subordinates have the necessary knowledge in performing their job function? | 3.00 | 3.00 | 2.50 | | | 2.89 |
| My subordinates have the necessary skills in performing their job function? | 3.00 | 3.50 | 2.50 | | | 3.22 |
| My immediate superior has the necessary experience in performing his/her job function? | 4.00 | 4.00 | 3.50 | 4.00 | 3.00 | 3.76 |
| My immediate superior has the necessary knowledge in performing his/her job function? | 4.00 | 4.00 | 3.67 | 4.00 | 4.00 | 3.88 |
| My immidiate superior has the necessary skills in performing his/her job function? | 4.00 | 4.00 | 3.83 | 4.00 | 4.00 | 3.94 |
| Grand Total | 3.67 | 3.65 | 3.48 | 4.00 | 3.67 | 3.63 |

**Table 4.19**

**Quality Division and Ability sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.19 the following shortfalls were highlighted:

- Level 3 indicated that their subordinates do not have the skills, experience or knowledge to perform their job function.

### 4.3.4.3 Element: Means

Table 4.20 gives an overview of the average rating of the survey outcome by means sub-criteria for division Quality on all levels according to the respondents.

| Average of Rating | Element | Division | Level | | | |
|---|---|---|---|---|---|---|
| | Means | | | | | |
| | QUALITY | | | | | QUALITY Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| The procedures are in place to perform my job function? | 2.00 | 3.71 | 4.00 | 4.00 | 4.00 | 3.76 |
| The procedures are in place for my subordinates to perform their job function? | 2.00 | 3.33 | 3.50 | | | 3.22 |
| The procedures are in place for my superior to perform his/her job function? | 4.00 | 3.86 | 2.83 | 4.00 | 4.00 | 3.53 |
| The systems are in place to perform my job function? | 3.00 | 3.43 | 3.17 | 3.00 | 3.00 | 3.24 |
| The systems are in place for my subordinates to perform their job function? | 3.00 | 3.17 | 3.00 | | | 3.11 |
| The systems are in place for my superior to perform his/her job function? | 4.00 | 3.43 | 3.00 | 4.00 | 4.00 | 3.41 |
| I have adequate tools to perform my job function? | 4.00 | 3.86 | 3.33 | 3.00 | 4.00 | 3.59 |
| My subordinates have adequate tools to perform their job function? | 4.00 | 3.00 | 3.50 | | | 3.22 |
| My superior have adequate tools to perform their job function? | 4.00 | 4.00 | 3.33 | 4.00 | 4.00 | 3.76 |
| The standard of equipment is acceptable to perform my job function? | 4.00 | 3.43 | 3.33 | 3.00 | 4.00 | 3.41 |
| The standard of equipment for my subordinates are acceptable to perform their job function? | 4.00 | 3.00 | 3.50 | | | 3.22 |
| The standard of equipment for my superior is acceptable to perform his/her job function? | 4.00 | 3.86 | 3.50 | 4.00 | 4.00 | 3.76 |
| Grand Total | 3.50 | 3.53 | 3.32 | 3.63 | 3.88 | 3.48 |

**Table 4.20**

**Quality Division and Means sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.20 the following shortfalls were highlighted:

- Level 1 indicated that the procedures are not in place to perform their job function nor are they for their subordinates; and
- Level 3 indicated that the procedures are not in place for their superiors to perform their job function.

### 4.3.4.4 Element: Authority

Table 4.21 gives an overview of the average rating of the survey outcome by authority sub-criteria for division Quality on all levels according to the respondents.

| Average of Rating | Element | Division | Level | | | |
|---|---|---|---|---|---|---|
| | Authority | | | | | |
| | QUALITY | | | | | QUALITY Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| My new ideas and suggestions are acknowledged and handled appropriately? | 4.00 | 3.43 | 3.17 | 3.50 | 4.00 | 3.41 |
| I am empowered to make decisions relating to my job function? | 4.00 | 3.86 | 3.33 | 4.00 | 4.00 | 3.71 |
| I am part of decision making relating to my job function? | 4.00 | 3.71 | 3.33 | 3.50 | 4.00 | 3.59 |
| My subordinates are empowered to make decisions relating to their job function? | 4.00 | 3.50 | 3.50 | | | 3.56 |
| I can change anything in my process which can positively impact on output? | 4.00 | 4.00 | 4.00 | 2.00 | 4.00 | 3.76 |
| I can stop production/process due to anything that has a negative impact on my output? | 4.00 | 4.00 | 3.67 | 4.00 | 3.00 | 3.82 |
| My subordinates change anything in their process which can positively impact on output? | 4.00 | 2.83 | 2.00 | | | 2.78 |
| My subordinates can stop production/process due to anything that has a negative impact on their output? | 4.00 | 3.00 | 4.00 | | | 3.33 |
| My immediate superior change anything in his/her process which can positively impact on output? | 3.00 | 3.86 | 4.00 | 4.00 | 3.00 | 3.82 |
| My immediate can superior stop production/process due to anything that has a negative impact on his/her output? | 4.00 | 4.00 | 3.67 | 4.00 | 4.00 | 3.88 |
| I have the opportunity to bring new ideas and suggestions to my superior's attention? | 4.00 | 4.00 | 3.67 | 4.00 | 4.00 | 3.88 |
| My immediate superior is empowered to make decisions relating his/her job function? | 4.00 | 4.00 | 3.83 | 4.00 | 4.00 | 3.94 |
| Grand Total | 3.92 | 3.70 | 3.58 | 3.67 | 3.78 | 3.68 |

**Table 4.21**

**Quality Division and Authority sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.21 the following shortfalls were highlighted:

- Level 3 indicated that they cannot change anything in their process that will have a positive impact on their output; and
- Levels 2 & 3 indicated that their superiors cannot change anything in their process that will have a positive impact on output.

### 4.3.4.5 Element: Measure

Table 4.22 gives an overview of the average rating of the survey outcome by measure sub-criteria for division Quality on all levels according to the respondents.

| Average of Rating | Element | Division | Level | | | |
|---|---|---|---|---|---|---|
| | Measure | | | | | |
| | QUALITY | | | | | QUALITY Total |
| Sub criteria | 1 | 2 | 3 | 4 | 5 | |
| I am rewarded for over performance? | 4.00 | 0.57 | 0.00 | 0.00 | 0.00 | 0.47 |
| I am disciplined for under performance? | 4.00 | 3.86 | 3.33 | 4.00 | 4.00 | 3.71 |
| My performance is formally measured against cost? | 4.00 | 2.86 | 1.33 | 1.50 | 4.00 | 2.29 |
| My performance is formally measured against morale? | 4.00 | 3.00 | 1.33 | 1.50 | 4.00 | 2.35 |
| My performance is formally measured against quality? | 4.00 | 3.14 | 2.00 | 1.50 | 4.00 | 2.65 |
| My performance is formally measured against speed? | 4.00 | 2.43 | 2.00 | 1.50 | 4.00 | 2.35 |
| I reward my subordinates for over performance? | 2.00 | 0.00 | 0.00 | | | 0.22 |
| I discipline my subordinates for under performance? | 2.00 | 3.17 | 4.00 | | | 3.22 |
| I measure my subordinates against cost? | 4.00 | 1.33 | 0.00 | | | 1.33 |
| I measure my subordinates against morale? | 4.00 | 2.00 | 0.00 | | | 1.78 |
| I measure my subordinates against quality? | 4.00 | 2.33 | 2.00 | | | 2.44 |
| I measure my subordinates againts speed? | 4.00 | 1.50 | 0.00 | | | 1.44 |
| I give recognition to my superior and any other person for doing their job function well? | 3.00 | 1.43 | 2.83 | 3.50 | 4.00 | 2.41 |
| I often give recognition to my subordinates for performing their job function well? | 3.00 | 3.33 | 3.50 | | | 3.33 |
| I receive recognition for performing my job function well? | 4.00 | 2.86 | 1.67 | 4.00 | 2.00 | 2.59 |
| Grand Total | 3.60 | 2.28 | 1.71 | 2.19 | 3.25 | 2.23 |

**Table 4.22**

**Quality and Measure sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.22 the following shortfalls were highlighted:

- Levels 2, 3, 4 & 5 indicated that they are not rewarded for over-performance;
- Levels 3 & 4 indicated they are not measured against cost, morale, speed or quality;
- Level 2 indicated that they are not measured against cost and speed;
- Level 1 indicated that he does discipline his subordinates for under-performance;
- Levels 1, 2 & 3 indicated that they do not reward their subordinates for over-performance;
- Levels 3 & 4 indicated they do not measure their subordinates against cost, morale, speed or quality;

- Levels 2 & 3 indicated that they do not give their superior or anybody else recognition for doing their job well; and
- Levels 2, 3 & 5 indicated they received no recognition for doing their job well.

### 4.3.5 Division: Projects

#### 4.3.5.1 Element: Responsibility

Table 4.23 gives an overview of the average rating of the survey outcome by responsibility sub-criteria for division Projects on all levels according to the respondents.

| Average Rating | Element | Division | Level | |
|---|---|---|---|---|
| | Responsibility | | | |
| | PROJ | | | PROJ Total |
| Sub criteria | 2 | 3 | 4 | |
| My job description clearly states my responsibilities? | 3.00 | 0.00 | 3.50 | 2.00 |
| I have a job profile/description that explains my job function? | 3.00 | 0.00 | 3.50 | 2.00 |
| My subordinate's job description clearly state their responsibilities? | 2.00 | | | 2.00 |
| I hold my subordinates responsible for cost? | 4.00 | | | 4.00 |
| I understand what I am responsible for in performing my job function in relations to my job description? | 4.00 | 1.50 | 4.00 | 3.00 |
| In performing your job function I am held responsible for the cost? | 4.00 | 4.00 | 4.00 | 4.00 |
| My immediate superior is held responsible for morale? | 4.00 | 3.50 | 4.00 | 3.80 |
| My immediate superior understand what he/she is responsible for in performing their job function? | 4.00 | 3.50 | 4.00 | 3.80 |
| My immediate superior is held responsible for cost? | 4.00 | 3.50 | 4.00 | 3.80 |
| My immediate superior is held responsible for speed? | 4.00 | 3.50 | 4.00 | 3.80 |
| My immediate superior held responsible for quality? | 4.00 | 3.50 | 4.00 | 3.80 |
| I hold my subordinates responsible for morale in performing their job function? | 4.00 | | | 4.00 |
| My subordinates understand what they are responsible for in performing their job function? | 3.00 | | | 3.00 |
| In performing my job function I am held responsible for morale? | 4.00 | 2.00 | 4.00 | 3.20 |
| In performing my job function I am held responsible for quality? | 4.00 | 4.00 | 4.00 | 4.00 |
| In performing my job function I am held responsible for speed? | 4.00 | 4.00 | 4.00 | 4.00 |
| I hold my subordinates responsible for speed? | 4.00 | | | 4.00 |
| I hold my subordinates responsible for quality? | 4.00 | | | 4.00 |
| Grand Total | 3.72 | 2.75 | 3.92 | 3.44 |

**Table 4.23**

**Projects Division and Responsibility sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.23 the following shortfalls were highlighted:

- Level 3 indicated that their job descriptions do not clearly state their responsibilities;
- Level 3 indicated that their job descriptions do not clearly explain their job function;
- Level 2 indicated that their subordinates job descriptions do not clearly explain their job function;
- Level 3 indicated that they do not understand what they are responsible for in relation to their job description; and
- Level 3 indicated that they are not held responsible for morale.

#### 4.3.5.2 Element: Ability

Table 4.24 gives an overview of the average rating of the survey outcome by ability sub-criteria for division Projects on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | |
|---|---|---|---|---|
| | Ability | | | |
| | PROJ | | | PROJ Total |
| Sub criteria | 2 | 3 | 4 | |
| My immediate superior has the necessary experience in performing his/her job function? | 3.00 | 3.50 | 3.50 | 3.40 |
| My immediate superior has the necessary skills in performing his/her job function? | 3.00 | 4.00 | 4.00 | 3.80 |
| My immediate superior has the necessary knowledge in performing his/her job function? | 3.00 | 4.00 | 4.00 | 3.80 |
| My subordinates have the necessary knowledge in performing their job function? | 3.00 | | | 3.00 |
| My subordinates have the necessary experience in performing their job function? | 3.00 | | | 3.00 |
| My subordinates have the necessary skills in performing their job function? | 4.00 | | | 4.00 |
| I have the necessary knowledge in performing my job function? | 4.00 | 4.00 | 4.00 | 4.00 |
| I have the necessary experience in performing my job function? | 4.00 | 4.00 | 3.50 | 3.80 |
| I have the necessary skills in performing my job function? | 4.00 | 4.00 | 4.00 | 4.00 |
| Grand Total | 3.44 | 3.92 | 3.83 | 3.76 |

**Table 4.24**

**Projects Division and Ability sub-criteria**

Source: Survey Questionnaire A and B

Table 4.24 indicates that all levels have the ability to perform their job function.

#### 4.3.5.3 Element: Means

Table 4.25 gives an overview of the average rating of the survey outcome by means sub-criteria for division Projects on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | |
|---|---|---|---|---|
| | Means | | | |
| | PROJ | | | PROJ Total |
| Sub criteria | 2 | 3 | 4 | |
| The procedures are in place to perform my job function? | 3.00 | 3.00 | 3.50 | 3.20 |
| The procedures are in place for my subordinates to perform their job function? | 3.00 | | | 3.00 |
| The procedures are in place for my superior to perform his/her job function? | 4.00 | 3.00 | 3.50 | 3.40 |
| The systems are in place to perform my job function? | 2.00 | 3.00 | 3.50 | 3.00 |
| The systems are in place for my subordinates to perform their job function? | 2.00 | | | 2.00 |
| The systems are in place for my superior to perform his/her job function? | 4.00 | 3.50 | 3.50 | 3.60 |
| I have adequate tools to perform my job function? | 3.00 | 3.50 | 3.50 | 3.40 |
| My subordinates have adequate tools to perform their job function? | 3.00 | | | 3.00 |
| My superior have adequate tools to perform his/her job function? | 4.00 | 3.50 | 4.00 | 3.80 |
| The standard of equipment is acceptable to perform my job function? | 3.00 | 3.50 | 3.50 | 3.40 |
| The standard of equipment for my subordinates are acceptable to perform their job function? | 3.00 | | | 3.00 |
| The standard of equipment for my superior is acceptable to perform his/her job function? | 4.00 | 3.50 | 4.00 | 3.80 |
| Grand Total | 3.17 | 3.31 | 3.63 | 3.39 |

**Table 4.25**

**Projects Division and Means sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.25 the following shortfall was highlighted:

- Level 2 indicated that the systems are not in place for them or their subordinates to perform their job function.

#### 4.3.5.4 Element: Authority

Table 4.26 gives an overview of the average rating of the survey outcome by authority sub-criteria for division Projects on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | |
|---|---|---|---|---|
| | Authority | | | |
| | PROJ | | | PROJ Total |
| Sub criteria | 2 | 3 | 4 | |
| I am empowered to make decisions relating to my job function? | 3.00 | 3.50 | 3.50 | 3.40 |
| I am part of decision making relating to my job function? | 4.00 | 3.00 | 4.00 | 3.60 |
| My subordinates can change anything in their process which can positively impact on output? | 4.00 | | | 4.00 |
| My new ideas and suggestions are acknowledged and handled appropriately? | 4.00 | 3.50 | 4.00 | 3.80 |
| My immediate superior change anything in his/her process which can positively impact on output? | 4.00 | 4.00 | 4.00 | 4.00 |
| I can change anything in my process which can positively impact on output? | 4.00 | 3.50 | 3.50 | 3.60 |
| My immediate superior can stop production/process due to anything that has a negative impact on his/her output? | 4.00 | 3.50 | 3.50 | 3.60 |
| I can stop production/process due to anything that has a negative impact on my output? | 4.00 | 3.00 | 3.50 | 3.40 |
| My subordinates are empowered to make decisions relating to their job function? | 4.00 | | | 4.00 |
| My subordinates can stop production/process due to anything that has a negative impact on their output? | 4.00 | | | 4.00 |
| My immediate superior is empowered to make decisions relating his/her job function? | 4.00 | 3.50 | 4.00 | 3.80 |
| I have the opportunity to bring new ideas and suggestions to your superior's attention? | 4.00 | 4.00 | 4.00 | 4.00 |
| Grand Total | 3.92 | 3.50 | 3.78 | 3.71 |

**Table 4.26**

**Projects Division and Authority sub-criteria**

Source: Survey Questionnaire A and B

Table 4.26 indicated that the projects division have the authority to make decisions relating to their job function.

#### 4.3.5.5 Element: Measure

Table 4.27 gives an overview of the average rating of the survey outcome by measure sub-criteria for division Projects on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | |
|---|---|---|---|---|
| | Measure | | | |
| | PROJ | | | PROJ Total |
| Sub criteria | 2 | 3 | 4 | |
| I am rewarded for over performance? | 4.00 | 0.50 | 0.00 | 1.00 |
| I reward my subordinates for over performance? | 0.00 | | | 0.00 |
| I measure my subordinates againts cost? | 2.00 | | | 2.00 |
| I give recognition to my superior and any other person for doing their job function well? | 4.00 | 4.00 | 3.00 | 3.60 |
| I receive recognition for performing my job function well? | 3.00 | 3.50 | 2.00 | 2.80 |
| I measure my subordinates againts morale? | 2.00 | | | 2.00 |
| My performance is formally measured against cost? | 3.00 | 3.50 | 4.00 | 3.60 |
| My performance is formally measured against morale? | 3.00 | 3.50 | 4.00 | 3.60 |
| My performance is formally measured against quality? | 3.00 | 3.50 | 4.00 | 3.60 |
| I measure my subordinates against quality? | 2.00 | | | 2.00 |
| I measure my subordinates against speed? | 2.00 | | | 2.00 |
| My performance is formally measured against speed? | 3.00 | 3.50 | 4.00 | 3.60 |
| I often give recognition to subordinates for performing their job function well? | 4.00 | | | 4.00 |
| I am disciplined for under performance? | 4.00 | 4.00 | 4.00 | 4.00 |
| I discipline my subordinates for under performance? | 4.00 | | | 4.00 |
| Grand Total | 2.87 | 3.25 | 3.13 | 3.09 |

**Table 4.27**

**Projects Division and Measure sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.27 the following shortfalls were highlighted:

- Levels 3 & 4 indicated that they are not rewarded for over-performance;
- Level 2 indicated that they do not reward their subordinates for over-performance;
- Level 4 indicated they received no recognition for doing their job well; and
- Level 2 indicated they do not measure their subordinates against cost, morale, speed or quality.

### 4.3.6 Division: Product Industrialisation

#### 4.3.6.1 Element: Responsibility

Table 4.28 gives an overview of the average rating of the survey outcome by responsibility sub-criteria for division Product Industrialisation on all levels according to the respondents.

| Average Rating | Element | Division | Level | |
|---|---|---|---|---|
| | Responsibility | | | |
| | PI | | | PI Total |
| Sub criteria | 1 | 2 | 3 | |
| My job description clearly states my responsibilities? | 4.00 | 4.00 | 0.00 | 3.00 |
| I have a job profile/description that explains my job function? | 4.00 | 4.00 | 0.00 | 3.00 |
| My subordinate's job description clearly state their responsibilities? | 4.00 | 4.00 | | 4.00 |
| I hold my subordinates responsible for cost? | 4.00 | 4.00 | | 4.00 |
| I understand what I am responsible for in performing my job function in relations to my job description? | 4.00 | 4.00 | 0.00 | 3.00 |
| In performing your job function I am held responsible for the cost? | 4.00 | 4.00 | 4.00 | 4.00 |
| My immediate superior is held responsible for morale? | 4.00 | 4.00 | 4.00 | 4.00 |
| My immediate superior understand what he/she is responsible for in performing their job function? | 4.00 | 4.00 | 4.00 | 4.00 |
| My immediate superior is held responsible for cost? | 4.00 | 4.00 | 4.00 | 4.00 |
| My immediate superior is held responsible for speed? | 4.00 | 4.00 | 4.00 | 4.00 |
| My immediate superior held responsible for quality? | 4.00 | 4.00 | 4.00 | 4.00 |
| I hold my subordinates responsible for morale in performing their job function? | 4.00 | 0.00 | | 2.00 |
| My subordinates understand what they are responsible for in performing their job function? | 4.00 | 3.00 | | 3.50 |
| In performing my job function I am held responsible for morale? | 4.00 | 4.00 | 4.00 | 4.00 |
| In performing my job function I am held responsible for quality? | 4.00 | 4.00 | 4.00 | 4.00 |
| In performing my job function I am held responsible for speed? | 4.00 | 4.00 | 4.00 | 4.00 |
| I hold my subordinates responsible for speed? | 4.00 | 4.00 | | 4.00 |
| I hold my subordinates responsible for quality? | 4.00 | 4.00 | | 4.00 |
| Grand Total | 4.00 | 3.83 | 3.00 | 3.72 |

**Table 4.28**

**Product Industrialisation Division and Responsibility sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.28 the following shortfalls were highlighted:

- Level 3 indicated that their job descriptions do not clearly state their responsibilities;
- Level 3 indicated that their job descriptions do not clearly explain their job function;

- Level 3 indicated that they do not understand what they are responsible for in relation to their job description; and
- Level 3 indicated that they do not hold their subordinates responsible for morale.

#### 4.3.6.2 Element: Ability

Table 4.29 gives an overview of the average rating of the survey outcome by ability sub-criteria for division Product Industrialisation on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | |
|---|---|---|---|---|
| | Ability | | | |
| | PI | | | PI Total |
| Sub criteria | 1 | 2 | 3 | |
| My immediate superior has the necessary experience in performing his/her job function? | 4.00 | 4.00 | 4.00 | 4.00 |
| My immediate superior has the necessary skills in performing his/her job function? | 4.00 | 4.00 | 4.00 | 4.00 |
| My immediate superior has the necessary knowledge in performing his/her job function? | 4.00 | 4.00 | 4.00 | 4.00 |
| My subordinates have the necessary knowledge in performing their job function? | 4.00 | 3.00 | | 3.50 |
| My subordinates have the necessary experience in performing their job function? | 4.00 | 2.00 | | 3.00 |
| My subordinates have the necessary skills in performing their job function? | 4.00 | 3.00 | | 3.50 |
| I have the necessary knowledge in performing my job function? | 4.00 | 4.00 | 4.00 | 4.00 |
| I have the necessary experience in performing my job function? | 4.00 | 4.00 | 4.00 | 4.00 |
| I have the necessary skills in performing my job function? | 4.00 | 4.00 | 4.00 | 4.00 |
| Grand Total | 4.00 | 3.73 | 4.00 | 3.87 |

**Table 4.29**

**Product Industrialisation Division and Ability sub-criteria**

Source: Survey Questionnaire A and B

Table 4.29 indicates that all levels have the ability to perform their job function, except level 2 who indicated that their subordinates do not have the necessary experience to perform their job function.

### 4.3.6.3 Element: Means

Table 4.30 gives an overview of the average rating of the survey outcome by means sub-criteria for division Product Industrialisation on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | |
|---|---|---|---|---|
| | Means | | | |
| | PI | | | PI Total |
| Sub criteria | 1 | 2 | 3 | |
| The procedures are in place to perform my job function? | 4.00 | 3.50 | 4.00 | 3.75 |
| The procedures are in place for my subordinates to perform their job function? | 4.00 | 3.00 | | 3.50 |
| The procedures are in place for my superior to perform his/her job function? | 4.00 | 3.50 | 4.00 | 3.75 |
| The systems are in place to perform my job function? | 4.00 | 3.50 | 4.00 | 3.75 |
| The systems are in place for my subordinates to perform their job function? | 4.00 | 3.00 | | 3.50 |
| The systems are in place for my superior to perform his/her job function? | 4.00 | 3.50 | 4.00 | 3.75 |
| I have adequate tools to perform my job function? | 4.00 | 3.50 | 4.00 | 3.75 |
| My subordinates have adequate tools to perform their job function? | 4.00 | 3.00 | | 3.50 |
| My superior have adequate tools to perform his/her job function? | 4.00 | 3.50 | 4.00 | 3.75 |
| The standard of equipment is acceptable to perform my job function? | 4.00 | 3.00 | 4.00 | 3.50 |
| The standard of equipment for my subordinates are acceptable to perform their job function? | 4.00 | 2.00 | | 3.00 |
| The standard of equipment for my superior is acceptable to perform his/her job function? | 4.00 | 3.50 | 4.00 | 3.75 |
| Grand Total | 4.00 | 3.30 | 4.00 | 3.65 |

**Table 4.30**

**Product Industrialisation Division and Means sub-criteria**

Source: Survey Questionnaire A and B

Table 4.30 indicated that they have the means to perform their job function, except level 2 who indicated that the standard of equipment for their subordinates is not acceptable to perform their job function.

### 4.3.6.4 Element: Authority

Table 4.31 gives an overview of the average rating of the survey outcome by authority sub-criteria for division Product Industrialisation on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | |
|---|---|---|---|---|
| | Authority | | | |
| | PI | | | PI Total |
| Sub criteria | 1 | 2 | 3 | |
| I am empowered to make decisions relating to my job function? | 4.00 | 3.50 | 4.00 | 3.75 |
| I am part of decision making relating to my job function? | 4.00 | 4.00 | 3.00 | 3.75 |
| My subordinates can change anything in their process which can positively impact on output? | 4.00 | 4.00 | | 4.00 |
| My new ideas and suggestions are acknowledged and handled appropriately? | 4.00 | 4.00 | 4.00 | 4.00 |
| My immediate superior change anything in his/her process which can positively impact on output? | 4.00 | 4.00 | 4.00 | 4.00 |
| I can change anything in my process which can positively impact on output? | 4.00 | 4.00 | 4.00 | 4.00 |
| My immediate superior can stop production/process due to anything that has a negative impact on his/her output? | 4.00 | 4.00 | 4.00 | 4.00 |
| I can stop production/process due to anything that has a negative impact on my output? | 4.00 | 4.00 | 4.00 | 4.00 |
| My subordinates are empowered to make decisions relating to their job function? | 4.00 | 4.00 | | 4.00 |
| My subordinates can stop production/process due to anything that has a negative impact on their output? | 4.00 | 4.00 | | 4.00 |
| My immediate superior is empowered to make decisions relating his/her job function? | 4.00 | 4.00 | 4.00 | 4.00 |
| I have the opportunity to bring new ideas and suggestions to your superior's attention? | 4.00 | 4.00 | 4.00 | 4.00 |
| Grand Total | 4.00 | 3.95 | 3.89 | 3.95 |

**Table 4.31**

**Product Industrialisation Division and Authority sub-criteria**

Source: Survey Questionnaire A and B

Table 4.31 indicated that the product industrialisation division has the authority to make decisions relating to their job function.

### 4.3.6.5 Element: Measure

Table 4.32 gives an overview of the average rating of the survey outcome by measure sub-criteria for division Product Industrialisation on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | |
|---|---|---|---|---|
| | Measure | | | |
| | PI | | | PI Total |
| Sub criteria | 1 | 2 | 3 | |
| I am rewarded for over performance? | 4.00 | 2.00 | 0.00 | 2.00 |
| I reward my subordinates for over performance? | 4.00 | 0.00 | | 2.00 |
| I measure my subordinates againts cost? | 4.00 | 4.00 | | 4.00 |
| I give recognition to my superior and any other person for doing their job function well? | 4.00 | 3.50 | 3.00 | 3.50 |
| I receive recognition for performing my job function well? | 4.00 | 3.00 | 3.00 | 3.25 |
| I measure my subordinates againts morale? | 4.00 | 0.00 | | 2.00 |
| My performance is formally measured against cost? | 4.00 | 3.50 | 0.00 | 2.75 |
| My performance is formally measured against morale? | 4.00 | 2.00 | 0.00 | 2.00 |
| My performance is formally measured against quality? | 4.00 | 4.00 | 0.00 | 3.00 |
| I measure my subordinates against quality? | 4.00 | 4.00 | | 4.00 |
| I measure my subordinates against speed? | 4.00 | 4.00 | | 4.00 |
| My performance is formally measured against speed? | 4.00 | 3.50 | 0.00 | 2.75 |
| I often give recognition to subordinates for performing their job function well? | 4.00 | 3.00 | | 3.50 |
| I am disciplined for under performance? | 4.00 | 4.00 | 4.00 | 4.00 |
| I discipline my subordinates for under performance? | 4.00 | 4.00 | | 4.00 |
| Grand Total | 4.00 | 3.04 | 1.25 | 3.04 |

**Table 4.32**

**Product Industrialisation Division and Measure sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.32 the following shortfalls were highlighted:

- Levels 2 & 3 indicated that they are not rewarded for over-performance;
- Level 2 indicated that they do not reward their subordinates for over-performance;
- Level 2 indicated they do not measure their subordinates against morale; and
- Level 2 indicated that they are not measured against morale, and level 3 indicated that they are not measured against morale, cost, speed or quality.

### 4.3.7 Division: Manpower Development

#### 4.3.7.1 Element: Responsibility

Table 4.33 gives an overview of the average rating of the survey outcome by responsibility sub-criteria for division Manpower Development on all levels according to the respondents.

| Average Rating | Element | Division | Level | |
|---|---|---|---|---|
| | Responsibility | | | |
| | MD | | | MD Total |
| Sub criteria | 1 | 3 | 4 | |
| My job description clearly states my responsibilities? | 4.00 | 4.00 | 0.50 | 2.25 |
| I have a job profile/description that explains my job function? | 4.00 | 4.00 | 1.00 | 2.50 |
| My subordinate's job description clearly state their responsibilities? | 4.00 | 3.00 | | 3.50 |
| I hold my subordinates responsible for cost? | 4.00 | 0.00 | | 2.00 |
| I understand what I am responsible for in performing my job function in relations to my job description? | 4.00 | 4.00 | 1.00 | 2.50 |
| In performing your job function I am held responsible for the cost? | 4.00 | 0.00 | 2.00 | 2.00 |
| My immediate superior is held responsible for morale? | 4.00 | 4.00 | 0.00 | 2.00 |
| My immediate superior understand what he/she is responsible for in performing their job function? | 4.00 | 4.00 | 0.50 | 2.25 |
| My immediate superior is held responsible for cost? | 4.00 | 4.00 | 2.00 | 3.00 |
| My immediate superior is held responsible for speed? | 0.00 | 4.00 | 0.00 | 1.00 |
| My immediate superior held responsible for quality? | 4.00 | 4.00 | 0.00 | 2.00 |
| I hold my subordinates responsible for morale in performing their job function? | 4.00 | 2.00 | | 3.00 |
| My subordinates understand what they are responsible for in performing their job function? | 4.00 | 4.00 | | 4.00 |
| In performing my job function I am held responsible for morale? | 4.00 | 4.00 | 2.00 | 3.00 |
| In performing my job function I am held responsible for quality? | 4.00 | 4.00 | 2.00 | 3.00 |
| In performing my job function I am held responsible for speed? | 0.00 | 4.00 | 2.00 | 2.00 |
| I hold my subordinates responsible for speed? | 0.00 | 3.00 | | 1.50 |
| I hold my subordinates responsible for quality? | 4.00 | 3.00 | | 3.50 |
| Grand Total | 3.33 | 3.28 | 1.08 | 2.42 |

**Table 4.33**

**Manpower Development Division and Responsibility sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.33 the following shortfalls were highlighted:

- Level 4 indicated that their job descriptions do not clearly state their responsibilities;
- Level 4 indicated that their job descriptions do not clearly explain their job function;

- Level 3 indicated that they do not hold their subordinates responsible for morale or cost;
- Level 3 indicated that they are not held responsible for cost, morale, speed or quality;
- Level 2 indicated that they are not held responsible for cost;
- Level 4 indicated that their superiors are not held responsible for cost, morale, speed or quality;
- Level 4 indicated that their superiors do not understand what they are responsible for in relation to their job description; and
- Level 1 indicated that they do not hold their subordinates responsible for speed.

#### 4.3.7.2 Element: Ability

Table 4.34 gives an overview of the average rating of the survey outcome by ability sub-criteria for division Manpower Development on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | |
|---|---|---|---|---|
| | Ability | | | |
| | MD | | | MD Total |
| Sub criteria | 1 | 3 | 4 | |
| My immediate superior has the necessary experience in performing his/her job function? | 4.00 | 3.00 | 2.50 | 3.00 |
| My immediate superior has the necessary skills in performing his/her job function? | 4.00 | 4.00 | 3.50 | 3.75 |
| My immediate superior has the necessary knowledge in performing his/her job function? | 4.00 | 3.00 | 3.50 | 3.50 |
| My subordinates have the necessary knowledge in performing their job function? | 4.00 | 2.00 | | 3.00 |
| My subordinates have the necessary experience in performing their job function? | 4.00 | 2.00 | | 3.00 |
| My subordinates have the necessary skills in performing their job function? | 4.00 | 2.00 | | 3.00 |
| I have the necessary knowledge in performing my job function? | 4.00 | 4.00 | 2.00 | 3.00 |
| I have the necessary experience in performing my job function? | 4.00 | 4.00 | 4.00 | 4.00 |
| I have the necessary skills in performing my job function? | 4.00 | 4.00 | 4.00 | 4.00 |
| Grand Total | 4.00 | 3.11 | 3.25 | 3.43 |

**Table 4.34**

**Manpower Development Division and Ability sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.34 the following shortfalls were highlighted:

- Level 4 indicated that their superiors do not have the knowledge to perform their job function;
- Level 3 indicated that they do not have the skills, experience or knowledge to perform their job function; and
- Level 4 indicated that they do not have the knowledge to perform their job function.

#### 4.3.7.3 Element: Means

Table 4.35 gives an overview of the average rating of the survey outcome by means sub-criteria for division Manpower Development on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | |
|---|---|---|---|---|
| | Means | | | |
| | MD | | | MD Total |
| Sub criteria | 1 | 3 | 4 | |
| The procedures are in place to perform my job function? | 3.00 | 2.00 | 3.00 | 2.75 |
| The procedures are in place for my subordinates to perform their job function? | 3.00 | 3.00 | | 3.00 |
| The procedures are in place for my superior to perform his/her job function? | 3.00 | 4.00 | 2.50 | 3.00 |
| The systems are in place to perform my job function? | 3.00 | 3.00 | 2.00 | 2.50 |
| The systems are in place for my subordinates to perform their job function? | 3.00 | 4.00 | | 3.50 |
| The systems are in place for my superior to perform his/her job function? | 3.00 | 4.00 | 2.50 | 3.00 |
| I have adequate tools to perform my job function? | 4.00 | 4.00 | 1.00 | 2.50 |
| My subordinates have adequate tools to perform their job function? | 4.00 | 3.00 | | 3.50 |
| My superior have adequate tools to perform his/her job function? | 4.00 | 4.00 | 4.00 | 4.00 |
| The standard of equipment is acceptable to perform my job function? | 4.00 | 4.00 | 2.00 | 3.00 |
| The standard of equipment for my subordinates are acceptable to perform their job function? | 4.00 | 3.00 | | 3.50 |
| The standard of equipment for my superior is acceptable to perform his/her job function? | 4.00 | 4.00 | 3.00 | 3.50 |
| Grand Total | 3.50 | 3.50 | 2.50 | 3.10 |

**Table 4.35**

**Projects Division and Means sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.35 the following shortfalls were highlighted:

- Level 3 indicated that the procedures are not in place to perform their job function, and level 4 indicated that the systems are not in place;
- Level 4 indicated that the procedures and systems for their superiors are not in place to perform their job function; and
- Level 4 indicated that they do not have adequate tools and the standard of equipment is not acceptable to perform their job function.

#### 4.3.7.4 Element: Authority

Table 4.36 gives an overview of the average rating of the survey outcome by authority sub-criteria for division Manpower Development on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | |
|---|---|---|---|---|
| | Authority | | | |
| | MD | | | MD Total |
| Sub criteria | 1 | 3 | 4 | |
| I am empowered to make decisions relating to my job function? | 4.00 | 4.00 | 2.00 | 3.00 |
| I am part of decision making relating to my job function? | 4.00 | 4.00 | 0.00 | 2.00 |
| My subordinates can change anything in their process which can positively impact on output? | 0.00 | 3.00 | | 1.50 |
| My new ideas and suggestions are acknowledged and handled appropriately? | 4.00 | 4.00 | 2.00 | 3.00 |
| My immediate superior change anything in his/her process which can positively impact on output? | 0.00 | 4.00 | 0.00 | 1.00 |
| I can change anything in my process which can positively impact on output? | 0.00 | 4.00 | 1.00 | 1.50 |
| My immediate superior can stop production/process due to anything that has a negative impact on his/her output? | 0.00 | 4.00 | 0.00 | 1.00 |
| I can stop production/process due to anything that has a negative impact on my output? | 0.00 | 4.00 | 1.00 | 1.50 |
| My subordinates are empowered to make decisions relating to their job function? | 4.00 | 4.00 | | 4.00 |
| My subordinates can stop production/process due to anything that has a negative impact on their output? | 0.00 | 4.00 | | 2.00 |
| My immediate superior is empowered to make decisions relating his/her job function? | 4.00 | 4.00 | 4.00 | 4.00 |
| I have the opportunity to bring new ideas and suggestions to your superior's attention? | 4.00 | 4.00 | 2.00 | 3.00 |
| Grand Total | 2.00 | 3.92 | 1.33 | 2.26 |

**Table 4.36**

**Manpower Development Division and Authority sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.36 the following shortfalls were highlighted:

- Level 4 indicated that they are not empowered to make decisions relating to their job function;
- Level 4 indicated that they are not part of decision-making relating to their job function;
- Level 1 indicated that their subordinates cannot change anything in their process that will have a positive impact on their output;
- Level 4 indicated that new ideas or suggestions are not acknowledged and handled appropriately;
- Level 1 & 4 indicated that their superiors cannot change anything in their process that will have a positive impact on output;
- Levels 1 & 4 indicated that they cannot change anything in their process that will have a positive impact on output;

- Levels 1 & 4 indicated that their superiors and themselves cannot stop production/process if it has a negative impact on their output;
- Level 1 indicated that their subordinates cannot stop production/process if it has a negative impact on their output; and
- Level 4 indicated that they do not have the opportunity to bring new ideas or suggestions to their superior's attention.

#### 4.3.7.5 Element: Measure

Table 4.37 gives an overview of the average rating of the survey outcome by measure sub-criteria for division Manpower Development on all levels according to the respondents.

| Average of Rating | Element | Devision | Level | |
|---|---|---|---|---|
| | Measure | | | |
| | MD | | | MD Total |
| Sub criteria | 1 | 3 | 4 | |
| I am rewarded for over performance? | 4.00 | 0.00 | 0.00 | 1.00 |
| I reward my subordinates for over performance? | 0.00 | 0.00 | 0.00 | 0.00 |
| I measure my subordinates againts cost? | 4.00 | 2.00 | | 3.00 |
| I give recognition to my superior and any other person for doing their job function well? | 0.00 | 3.00 | 0.00 | 0.75 |
| I receive recognition for performing my job function well? | 4.00 | 2.00 | 0.00 | 1.50 |
| I measure my subordinates againts morale? | 0.00 | 2.00 | | 1.00 |
| My performance is formally measured against cost? | 4.00 | 2.00 | 0.00 | 1.50 |
| My performance is formally measured against morale? | 0.00 | 2.00 | 0.00 | 0.50 |
| My performance is formally measured against quality? | 4.00 | 4.00 | 0.00 | 2.00 |
| I measure my subordinates against quality? | 4.00 | 4.00 | | 4.00 |
| I measure my subordinates against speed? | 0.00 | 4.00 | | 2.00 |
| My performance is formally measured against speed? | 0.00 | 4.00 | 0.00 | 1.00 |
| I often give recognition to subordinates for performing their job function well? | 4.00 | 3.00 | 0.00 | 2.33 |
| I am disciplined for under performance? | 4.00 | 4.00 | 2.00 | 3.00 |
| I discipline my subordinates for under performance? | 4.00 | 3.00 | 0.00 | 2.33 |
| Grand Total | 2.40 | 2.60 | 0.21 | 1.61 |

**Table 4.37**

**Manpower Development Division and Measure sub-criteria**

Source: Survey Questionnaire A and B

From Table 4.37 the following shortfalls were highlighted:

- Levels 3 & 4 indicated that they are not rewarded for over-performance;
- Levels 1 & 3 indicated that they do not reward their subordinates for over-performance;
- Level 3 indicated they do not measure their subordinates against cost or morale;
- Levels 1 & 4 indicated that they do not give recognition to their superior or any other person for doing their job well;
- Levels 3 & 4 indicated that they do not receive recognition for doing their job well;
- Level 1 indicated that they do not measure their subordinates against speed or morale;
- Level 4 indicated they are not measured against speed, quality, morale or cost;
- Level 3 indicated that they are not measured against cost or morale;
- Level 1 indicated that they are not measured against morale or speed; and
- Level 4 indicated that they are not disciplined for under-performance.

## 4.4 CONCLUDING REMARKS

The purpose of this chapter was to analyse and interpret the data obtained through the research questionnaire. The analysis and interpretation of data was undertaken in terms of the objectives of the research stated in chapter one.

An evaluation of the results of the research questionnaire indicated that some of the principles discussed in chapter three were being adhered to, but there seemed to be a general indication that personnel are not held accountable.

Chapter five offers conclusions and recommendations based on the above-mentioned findings.

# CHAPTER 5

# CONCLUSIONS AND RECOMMENDATIONS

## 5.1 INTRODUCTION

In this chapter the main and sub-problems of this research will be resolved through the recommendations made, which are based on the findings of the research which were presented in chapter four. General comments made by the respondents during the research will be described and lastly, suggestions for the application of the findings will be presented.

## 5.2 RESOLUTION OF THE MAIN PROBLEM

The main problem posed in this research paper was:

**Are personnel held accountable within the manufacturing environment of Continental Tyre South Africa?**

In order to develop a strategy to conduct the research in a systematic manner, the following sub-problems were identified to find an appropriate solution to the main problem.

- What does the literature reveal about the different elements that make up accountability?
- How can accountability be assessed?
- Based on the results obtained from sub-problems one and two (above), what strategies can be implemented to address the shortfalls as revealed by the assessment?

The main problem and sub-problems were identified in order to determine the accountability of personnel within manufacturing at CTSA, and to address the shortfalls of accountability as revealed by the assessment.

The purpose of chapter two was to provide the necessary theoretical background of the contextual elements of accountability. This chapter, therefore, investigated the essence of accountability and the elements that support accountability.

The purpose of chapter three was to research and establish the appropriate research methodology method to assess accountability.

The purpose of chapter four was to establish the current levels of accountability within the manufacturing environment at CTSA, which was done through the subsequent analysis of the survey results. In the empirical study it was proven that within the manufacturing environment at CTSA certain levels and divisions met the requirements for being accountable and others not. However, although certain levels and divisions met the requirements, certain recommendations needed to be made to facilitate the transformation towards total personnel accountability within manufacturing at CTSA.

## 5.3 OVERVIEW OF THE SURVEY OUTCOME BY ELEMENTS OF ACCOUNTABILITY

### 5.3.1 Responsibility

- There seems to be a general uncertainty on levels 4 and 5 regarding the existence of a proper job description/profile;
- The job descriptions/profiles that are in existence do not address the details of the individual job positions; and
- The job descriptions do not clearly define the responsibilities of personnel and the responsibilities tend to change frequently.

### 5.3.2 Ability

- There is a general consensus that most personnel think they have the necessary skills, knowledge and experience to perform their job function; and
- The majority of subordinates indicated that their superiors do not have the necessary skills or experience to perform their job function.

### 5.3.3 Means

- The condition of equipment used on floor-level needs to be improved, the continuous quick-fix maintenance seems to be the order of the day, and is not always successful;
- There is a major need for improved user-friendly systems in most levels and divisions. Examples mentioned were, scheduling, traceability, planned maintenance and communication; and
- Training manuals need to be updated to reflect the proper process steps with the necessary procedures to assist most personnel on floor-level when operating a machine.

### 5.3.4 Authority

- Levels 4 and 5 on floor-level believe they are not empowered to make decisions or take part in decision making relating to their job function with regards to speed and quality; and
- In cases where authority has been granted, it is not taken seriously on floor-level, first and middle line management decisions taken, is overruled most of the time.

### 5.3.5 Measure

- Most levels indicated the need for a fair and proper performance measurement system at all levels and for all divisions;
- The current balance scorecard system is not aimed at individual performance and therefore personnel are held accountable on what they have no control over; and
- Under-performance is frequently handled by means of disciplinary actions, but rewards are only given to a selected few.

## 5.4 OVERVIEW OF SURVEY OUTCOME BY DIVISION

### 5.4.1 Plant Engineering

The main area of focus for Plant Engineering was those of clearly defined job descriptions, proper measurement systems and the need for reward and recognition.

### 5.4.2 Production

All levels of production indicated minor to major improvement required on all elements discussed.

### 5.4.3 Industrial Engineering

The main areas of concern as indicated by the respondents are those of clearly defined responsibilities and proper measurement systems that are linked to reward and recognition.

### 5.4.4 Quality

The respondents indicated their need for clearly defined job descriptions and responsibilities and the need for a measurement system.

### 5.4.5 Projects

The main areas of concern as indicated by the respondents are those of clearly defined responsibilities, proper measurement systems and systems.

### 5.5.5 Product Industrialisation

The respondents indicated their need for clearly defined job descriptions and measurement systems.

### 5.5.6 Manpower Development

The main areas of concern as indicated by the respondents are those of clearly defined responsibilities, proper measurement systems and authority to make decisions relating to their job function.

## 5.5 GENERAL COMMENTS

The opportunity was given to respondents on the questionnaire to note down any comments they might have regarding the different elements. Some of these comments were quite specific to an issue while others were fairly general. The comments were grouped according to the different elements.

### 5.5.1 Responsibility

- Personnel become confused due to frequent changes in responsibilities; and
- Responsibilities change, but job descriptions remain the same.

### 5.5.2 Ability

- Co-ordinators on level 4 have no knowledge and cannot assist the level 5 personnel if there is a problem;

- Personnel in certain positions are too young and do not have sufficient experience;
- Superiors lack the skills in handling personnel issues;
- Lack of knowledge and skills resulting in machines getting fixed for recurring problems;
- Scheduling system, and planned maintenance not working correctly;
- Traceability system needs improvement as tags get changed;
- More training required on processes and labour trainers must be more involved; and
- One is told to work; when one complains one is told there is the gate.

### 5.5.3 Means

- Proper channels are not followed when deviations are required;
- Poor assistance from servicing departments;
- Need for training on processes;
- Required to borrow tools as one does not have any, when one complains, no answer;
- Technicians require modern tools;
- Balance scorecard not working properly; and
- Changes requested are not formalised, but on an ad-hoc basis.

### 5.5.4 Authority

- No response on improvement suggestions;
- No feedback from superiors on issues raised;
- Changes take place; when one asks, one gets told management said so;
- Decision to stop production due to poor quality or scrap gets overruled by superior;
- Interference from the top;
- Decisions made on maintenance overruled by production; and
- During day shift approval from superior on certain decisions is required, however, during night shift when superior is not on duty one can make your own decisions.

### 5.5.5 Measure

- Get penalised for what is not in one's control;
- No formal performance measurement in place;
- Variable pay connected to balance scorecard not acceptable; and
- Need a reward system, even a small non-monetary gesture would suffice.

## 5.6 RECOMMENDATIONS

The overall objective of the study was to undertake a critical assessment of accountability of personnel within the manufacturing environment at CTSA. To achieve this objective, literature was consulted to identify theoretical guidelines and elements of accountability. The second objective was to research and establish the appropriate research methodology method to assess accountability. Thirdly, the current level of accountability was assessed in an empirical study and fourthly, recommendations were formulated to address the shortcomings identified in the survey.

From the respondents' ratings, it can be concluded that the underlying problems with the current accountability of personnel is that all the elements that make up accountability, are not clearly defined and are not seen as one. Furthermore, certain divisions were similar in response while others were not in their specific ratings per level per element. The response per division is very specific to that division and must be seen in context with the other divisions as they support each other in achieving the overall goals of the company.

It is therefore recommended, that each department work through their analysis and determine the direction they must follow in conjunction with the Head of Manufacturing. The following points per element would need to be considered by the heads of the different divisions as indicated by the analysis:

### 5.6.1 Responsibility

- Evaluation of current job descriptions/profiles, and determine the requirements per job function;
- Define what personnel are responsible for and make sure they understand it;
- Design a standard job description/profile in conjunction with other divisions and Human Resources; and
- Share one's job description/profile with one's subordinates, so they are aware of one's responsibilities.

### 5.6.2 Ability

- In clarifying their roles and responsibilities, assess if they have the relevant skills, knowledge and experience to perform their job function;
- All shortfalls identified need to be addressed in conjunction with Human Resources, which may require internal or external development interventions; and
- Share the shortfalls with each other so they can understand, but also assist each other in improving those shortfalls.

### 5.6.3 Means

- Clear definition of roles and responsibilities would enable each division to determine what would be required in terms of systems, tools, equipment and procedures;
- Traceability of non–conformance parts needs to be traced back to its origin, the continuous changing and misplacing of tags needs to be addressed through education or discipline on all levels;
- Deviations needs to be approved and properly documented, and the reason for the deviation explained;
- Continuous audits to be carried out to ensure, standard operating procedures are followed, tools are maintained in a good condition and the standard of equipment is according to specification;
- Explain to operators the reason for quick-fix approaches/strategies and the planned maintenance schedule for a full service, also the cost effect that the quick-fix approaches have on output; and
- Scheduling is critical to production, evaluate current system and all inputs related to scheduling and find solutions to current problems.

### 5.6.4 Authority

- Decision making is critical to any organisation, and the more personnel is part in the decision making process the more buy-in one would get and the easier it should become to manage;
- Divisions must agree on which type of decisions personnel will be involved in, what decisions one needs to make and why one is making them;
- Personnel need to understand the impact the decision made will have on the process, other processes and the company and ultimately the customer; and
- Overruling of decisions by superiors must be discussed and explained; personnel must understand why this happens.

### 5.6.5 Measure

- The need for a formal measurement system on all levels for all personnel, linked to a reward system is critical, the current system is only applicable to specific groups;
- People can only be held accountable for what they have control over; the current measurement system measures output and not the specific process the person has control over;
- Personnel must be measured on what they give and not on what they receive; and

- The reward system need not necessarily be monetary based.

## 5.7 CONCLUDING REMARKS

The purpose of this research paper was to determine the current levels and shortfalls of personnel accountability within manufacturing at CTSA. The research will give management a better understanding of the current status of personnel accountability with possible recommendations that can be considered for each division to address the shortfalls identified.

The main drive for change will depend on the Head of Manufacturing to ensure all divisional heads analyse their assessments and come up with the required solutions to address accountability within their respective divisions.

For the survival of any commodity type product organisation Connors & Smith (2005) maintain that accountability can help revitalise the business character, strengthen the global competitiveness of corporations, heighten innovation, improve quality of products and services produced by companies worldwide, and increase the responsiveness of organisations to the needs and wants of customers and constituents. This is the challenge faced by CTSA.

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| APPENDIX A | **Accountability Research Questionnaire** | dd / mm / year | **All answers will be treated as CONFIDENTIAL** |
|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Division** | Plant Engineering ☐ | Production ☐ | Industrial Engineering ☐ | Quality ☐ | Project ☐ | Product Industrialisation ☐ | Manpower Development ☐ |
| **Level 5** | Artisans ☐ | Operators ☐ | | | | | |
| **Level 4** | Coordinators ☐ | First Line Managers ☐ | Technicians ☐ | Labour Trainers ☐ | | | |
| **Level 3** | Shift Managers ☐ | Engineers ☐ | Training Officers ☐ | | | | |
| **Level 2** | Product Managers ☐ | Senior Engineers ☐ | Chemists ☐ | Scheduling Manager ☐ | | | |
| **Level 1** | Head Plant/Project Engineering ☐ | Head Production ☐ | Head Industrial Engineer ☐ | Head Quality ☐ | Head Product Industrialisation ☐ | Head Manpower Development ☐ | |

| **0** | **1** | **2** | **3** | **4** |
|---|---|---|---|---|
| **NO** | **NOT SURE** | **NEEDS MAJOR IMPROVE** | **NEEDS MINOR IMPROVE** | **YES** |

**NOTE: Use the last three months for examples to answer your questions**

| **No** | **Question** | **Rating** | **Comments** |
|---|---|---|---|
| | **Responsibility** | | |
| **1** | I have a job profile/description that explains my job function? | | |
| **2** | My job description clearly states my responsibilities? | | |
| **3** | My subordinate's job description clearly states their responsibilities? | | |
| **4** | I understand what I am responsible for in performing my job function in relations to my job description? | | |
| **5** | My subordinates understand what they are responsible for in performing their job function? (If I have subordinates) | | |
| **6** | My immediate superior understands what he/she is responsible for in performing their job function? | | |
| **7** | In performing my job function I am held responsible for the following? | | |
| **7.1** | Quality? | | |
| **7.2** | Speed? | | |
| **7.3** | Cost? | | |
| **7.4** | Morale? | | |

| No | Question | Rating | Comments |
|---|---|---|---|
| **8** | I hold my subordinates responsible for the following? | | |
| **8.1** | Quality? | | |
| **8.2** | Speed? | | |
| **8.3** | Cost? | | |
| **8.4** | Morale? | | |
| **9** | My immediate superior is held responsible for following? | | |
| **9.1** | Quality? | | |
| **9.2** | Speed? | | |
| **9.3** | Cost? | | |
| **9.4** | Morale? | | |
| | | | |
| | **Ability** | | |
| | | | |
| **10** | I have the following in performing my job function? | | |
| **10.1** | Skills? | | |
| **10.2** | Knowledge? | | |
| **10.3** | Experience? | | |
| **11** | My subordinates have the following in performing their job function? | | |
| **11.1** | Skills? | | |
| **11.2** | Knowledge? | | |
| **11.3** | Experience? | | |
| **12** | My immediate superior have the following in performing his/her job function? | | |
| **12.1** | Skills? | | |
| **12.2** | Knowledge? | | |
| **12.3** | Experience? | | |
| | | | |
| | | | |
| | | | |

| No | Question | Rating | Comments |
|---|---|---|---|
| | | | |
| | **Means** | | |
| **13** | I have the following in performing my job function? | | |
| **13.1** | Adequate Tools? | | |
| **13.2** | Standard of Equipment? | | |
| **13.3** | Systems (e.g. Traceability & Scheduling)? | | |
| **13.4** | Procedures? | | |
| **14** | My subordinates have the following in performing their job function? | | |
| **14.1** | Adequate Tools? | | |
| **14.2** | Standard of Equipment? | | |
| **14.3** | Systems (e.g. Traceability & Scheduling)? | | |
| **14.4** | Procedures? | | |
| **15** | My immediate superior have the following in performing his/her job function? | | |
| **15.1** | Adequate Tools? | | |
| **15.2** | Standard of Equipment? | | |
| **15.3** | Systems (e.g. Traceability & Scheduling)? | | |
| **15.4** | Procedures? | | |
| | **Authority** | | |
| **16** | I am part of decision making relating to my job function? | | |
| **17** | I am empowered to make decisions relating to my job function? | | |
| **17.1** | I can stop production/process due to anything that has a negative impact on my output? | | |
| **17.2** | I can change anything in my process which can positively impact on output? | | |
| **18** | My subordinates are empowered to make decisions relating to their job function? | | |
| **18.1** | My subordinates can stop production/process due to anything that has a negative impact on their output? | | |
| **18.2** | My subordinates can change anything in their process which can positively impact on output? | | |

| No | Question | Rating | Comments |
|---|---|---|---|
| **19** | My immediate superior is empowered to make decisions relating to his/her job function? | | |
| **19.1** | My immediate superior can stop production/process due to anything that has a negative impact on his/her output? | | |
| **19.2** | My immediate superior can change anything in his/her process which can positively impact on output? | | |
| **20** | I have the opportunity to bring new ideas and suggestions to my superior's attention? | | |
| **21** | My new ideas and suggestions are acknowledged and handled appropriately? | | |
| | **Measure** | | |
| **22** | I receive recognition for performing my job function well? | | |
| **23** | I often give recognition to my subordinates for performing their job function well? | | |
| **24** | I give recognition to my superior and any other person for doing their job function well? | | |
| **25** | My performance is formally measured against the following? | | |
| **25.1** | Quality? | | |
| **25.2** | Speed? | | |
| **25.3** | Cost? | | |
| **25.4** | Morale? | | |
| **26** | I measure my subordinates against the following? | | |
| **26.1** | Quality? | | |
| **26.2** | Speed? | | |
| **26.3** | Cost? | | |
| **26.4** | Morale? | | |
| **27** | I am disciplined for under performance? | | |
| **28** | I discipline my subordinates for under performance? | | |
| **29** | I am rewarded for over performance? | | |
| **30** | I reward my subordinates for over performance? | | |

| APPENDIX B | **Accountability Research Questionnaire** | dd / mm / year | **All answers will be treated as CONFIDENTIAL** |
|---|---|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Division** | Plant Engineering ☐ | Production ☐ | Industrial Engineering ☐ | Quality ☐ | Project ☐ | Product Industrialisation ☐ | Manpower Development ☐ |
| **Level 5** | Artisans ☐ | Operators ☐ | | | | | |
| **Level 4** | Coordinators ☐ | First Line Managers ☐ | Technicians ☐ | Labour Trainers ☐ | | | |
| **Level 3** | Shift Managers ☐ | Engineers ☐ | Training Officers ☐ | | | | |
| **Level 2** | Product Managers ☐ | Senior Engineers ☐ | Chemists ☐ | Scheduling Manager ☐ | | | |
| **Level 1** | Head Plant/Project Engineering ☐ | Head Production ☐ | Head Industrial Engineer ☐ | Head Quality ☐ | Head Product Industrialisation ☐ | Head Manpower Development ☐ | |

**Use the last three months for examples to answer your questions**

| **No** | **Question** | **✓ Tick The Appropriate Box** | | | | | **Comments** |
|---|---|---|---|---|---|---|---|
| | | **No** | **Not Sure** | **Need Major Improvement** | **Need Minor Improvement** | **Yes** | |
| | **Responsibility** | | | | | | |
| **1** | I have a job profile/description that explains my job function? | | | | | | |
| **2** | My job description clearly states my responsibilities? | | | | | | |
| **3** | I understand what I am responsible for in performing my job function in relations to my job description? | | | | | | |
| **4** | My immediate superior understands what he/she is responsible for in performing their job function? | | | | | | |
| **5** | In performing my job function I am held responsible for the following? | | | | | | |
| **5.1** | Quality? | | | | | | |
| **5.2** | Speed? | | | | | | |
| **5.3** | Cost? | | | | | | |
| **5.4** | Morale? | | | | | | |
| | | | | | | | |

| No | Question | No | Not Sure | Need Major Improvement | Need Minor Improvement | Yes | Comments |
|---|---|---|---|---|---|---|---|
| **6** | My immediate superior is held responsible for following? | | | | | | |
| **6.1** | Quality? | | | | | | |
| **6.2** | Speed? | | | | | | |
| **6.3** | Cost? | | | | | | |
| **6.4** | Morale? | | | | | | |
| | | | | | | | |
| | **Ability** | | | | | | |
| **7** | I have the following in performing my job function? | | | | | | |
| **7.1** | Skills? | | | | | | |
| **7.2** | Knowledge? | | | | | | |
| **7.3** | Experience? | | | | | | |
| **8** | My immediate superior have the following in performing his/her job function? | | | | | | |
| **8.1** | Skills? | | | | | | |
| **8.2** | Knowledge? | | | | | | |
| **8.3** | Experience? | | | | | | |
| | | | | | | | |
| | **Means** | | | | | | |
| **9** | I have the following in performing my job function? | | | | | | |
| **9.1** | Adequate Tools? | | | | | | |
| **9.2** | Standard of Equipment? | | | | | | |
| **9.3** | Systems (e.g. Traceability & Scheduling)? | | | | | | |
| **9.4** | Procedures? | | | | | | |
| | | | | | | | |

| No | Question | No | Not Sure | Need Major Improvement | Need Minor Improvement | Yes | Comments |
|---|---|---|---|---|---|---|---|
| **10** | My immediate superior have the following in performing his/her job function? | | | | | | |
| **10.1** | Adequate Tools? | | | | | | |
| **10.2** | Standard of Equipment? | | | | | | |
| **10.3** | Systems (e.g. Traceability & Scheduling)? | | | | | | |
| **10.4** | Procedures? | | | | | | |
| | | | | | | | |
| | **Authority** | | | | | | |
| **11** | I am part of decision making relating to my job function? | | | | | | |
| **12** | I am empowered to make decisions relating to my job function? | | | | | | |
| **12.1** | I can stop production/process due to anything that has a negative impact on my output? | | | | | | |
| **12.2** | I can change anything in my process which can positively impact on output? | | | | | | |
| **13** | My immediate superior is empowered to make decisions relating to his/her job function? | | | | | | |
| **13.1** | My immediate superior can stop production/process due to anything that has a negative impact on his/her output? | | | | | | |
| **13.2** | My immediate superior can change anything in his/her process which can positively impact on output? | | | | | | |
| **14** | I have the opportunity to bring new ideas and suggestions to my superior's attention? | | | | | | |
| **15** | My new ideas and suggestions are acknowledged and handled appropriately? | | | | | | |
| | | | | | | | |

| No | Question | No | Not Sure | Need Major Improvement | Need Minor Improvement | Yes | Comments |
|---|---|---|---|---|---|---|---|
| | **Measure** | | | | | | |
| **16** | I receive recognition for performing my job function well? | | | | | | |
| **17** | I give recognition to my superior and any other person for doing their job function well? | | | | | | |
| **18** | My performance is formally measured against the following? | | | | | | |
| **18.1** | Quality? | | | | | | |
| **18.2** | Speed? | | | | | | |
| **18.3** | Cost? | | | | | | |
| **18.4** | Morale? | | | | | | |
| **19** | I am disciplined for under performance? | | | | | | |
| **20** | I reward my subordinates for over performance? | | | | | | |